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FANCHER CREEK NURSERIES

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PLANTERS GUIDE
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1918



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Information for Intending Purchasers

The Order Blank accompanying this catalogue is for the convenience of customers and we will appreciate their using it, as it will facilitate the filling of their orders.

Always Give Full Address.—This is important; write your name plainly, your post-office, county and state.

Shipping Instructions.—Give your nearest express office and railway station, or stage route, and the name of the transportation company.

Write distinctly how you wish us to ship—by freight or express; also designate the route, otherwise we use our own discretion in forwarding.

Export Orders.—Orders for export to Old Mexico, the Hawaiian Islands, Cuba and South American points should give, in addition to the above, the steamship routes by which their orders are to be shipped.

No accurate data can be given as to freight charges on orders for export, but charges must be prepaid. With all export orders we require full amount of cash and in addition thereto at least as much as one-half of the amount of the order to cover transportation charges; otherwise we will reduce the order so that the remittance will pay for the order and transportation charges. Any amount remitted and not used will be returned promptly.

Accounts.—Orders from unknown correspondents must be accompanied by a remittance or satisfactory reference.

Orders to be sent by express, C. O. D., will be filled, provided one-half of the amount is sent with the order.

Remittances.—Send post-office money order, registered letter, express order, bank draft, or check. All orders from foreign countries to be accompanied by draft or international money order payable in U. S. gold.

Substitution.—Please state whether substitution will be permitted, as we feel at liberty when no instructions accompany the order to use other varieties as nearly similar as possible.

It very often happens on orders of small assorted varieties, for a home orchard, that it is necessary to make substitutions. On orders for commercial planting, substitutions are never made without first obtaining consent of customer.

Methods of Packing.—The method of packing a shipment of trees or plants is the basis on which freight charges are made. Nursery stock in bales completely covered with tule or burlap takes a first-class rate; in crates, second-class; in cases completely boxed the third-class rate applies.

We have made a very close study of traffic conditions, and our knowledge is used to secure in all cases the very lowest freight rates for the benefit of our customers.

We cannot hold ourselves responsible for any loss or injury to trees or plants after they have been carefully packed and shipped, but we will do everything in our power, if any loss should occur, for the protection and recovery of our customer's property.

Packing Charges.—We charge for the same only to cover the cost of material. Cartage to the railway or express office free of charge.

Parcel Post.—Within a radius of 150 miles from Fresno, orders not exceeding fifty pounds in weight and outside of this zone in the United States or any of its possessions, packages not exceeding twenty pounds may be forwarded by parcel post. Stock forwarded in this manner is charged for at single rates and the postage is extra. Our customers will kindly bear this in mind in making remittances.

It is not practical to send anything but the light grade trees, shrubs and plants in this manner and in many instances these must be cut back severely to come under the dimension regulations.

In California the requirements to forward to district inspection points for examination by the Horticultural Commissioner before it reaches destination, in many cases adds to the cost on account of the charges which accrue for re-forwarding and possible damage to the stock due to the lack of facilities for re-packing properly. Except to points at a distance from the railroad we strongly advise the forwarding of shipments by freight or express.

Errors.—If any mistakes are made in filling orders, we will cheerfully rectify the same, but must respectfully request our customers to notify us at once, or, at the most, within ten days after receipt of the goods.

Caliper Measurements.—Certain varieties of trees grow stocky, making it impossible to grade them on a basis of their height. We reserve the right on such trees to grade them on a diameter or caliper basis, as follows: The measurements are made one inch above the intersection of the bud with the stock.

1 to 2-inch caliper.....	8 to 10-ft. trees	3/8 to 1/2-inch caliper.....	3 to 4-ft. trees
3/4 to 1-inch caliper.....	6 to 8-ft. trees	1/4 to 3/8-inch caliper.....	2 to 3-ft. trees
1/2 to 3/4-inch caliper.....	4 to 6-ft. trees		

The difficulty of selecting varieties is a problem which no doubt confronts many of our customers, and in order to assist them in this we have placed an asterisk (*) opposite the names of such sorts which rank high in the planting of commercial orchards.

Prices subject to change without notice.

QUANTITY ORDERS.—Articles mentioned in this catalogue will be furnished as follows: 5 of a variety at the 10 rate, 50 at the 100 rate, 500 at the 1000 rate. To illustrate: one each of Baldwin, Delicious, Gravenstein, Lawver, Red Astrachan, making five in all, would entitle the purchaser to the 10 rate on apples. If an order called for five varieties of apples, as mentioned above, 1 Muir Peach, 1 French Prune, 1 Royal Apricot, 1 Bartlett Pear, 1 Washington Navel Orange, the 10 rate would apply on the apples, but the each rate on the assorted trees. Purchasers will please bear in mind that the quantity rates apply only where multiples of the same variety of tree is ordered and not on assortments. As an extreme case, 500 apples, one of each variety, would entitle the purchaser to the 1000 rate just the same as if the order consisted of 10 varieties of 50 trees each: if, however, 100 apples, 100 peaches, 100 pears, 100 plums, 100 nectarines, 100 apricots, 100 cherries, 100 walnuts, 100 oranges, and 100 persimmons were ordered, the 100 rate would apply on each item.

GUARANTEE.—The Fancher Creek Nurseries will exercise care to have all stock true to name, nevertheless it is understood and agreed that should any stock prove untrue to name, the Fancher Creek Nurseries shall be liable only for the sum paid for the stock which may prove untrue, and shall not be liable in any greater amount.

Address all correspondence to

Fancher Creek Nurseries, Inc.

GEO. C. ROEDING, President and Manager

Telephone, Telegraph, Postoffice and Express Address:

FRESNO, CALIFORNIA

Cable Address: "Calimyrna"

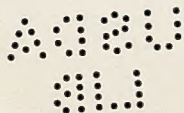
Western Union Code

Nurseryman's Telegraphic Code

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JAN -3 1918



ILLUSTRATED PRICE CATALOGUE 1918

TO THOSE WHO PLANT:

In this day of progress business is being divided up into two classes. In one the patron pays for the service rendered and the transaction, as far as the performance and acceptance is completed without any further exactions from either of the parties concerned. In the other class of business there is an aftermath, or to be more to the point, a reckoning which either redounds to the credit of the men or firm who receives the customer's money for the merchandise delivered, or on the other hand, the merchant may be branded as indifferent to the rights of his client, ready to take his money, congratulating himself if he succeeds in getting by without his customer discovering that he has been a victim of sharp practice.

In most lines of business where deception has been practiced on a customer, it is only a question of a very short time when he learns of the sharp practice. It is in this one respect that the nursery business differs from practically all other lines. To have nursery stock "True To Name" is what every nurseryman aspires to, as being the pivotal point in his business. He can not afford, however, to consider that his duties are completed even after having fulfilled this part of his obligation; for there are a number of other considerations. Among these may be mentioned the securing of buds, cuttings, scions from trees which are not only thrifty but which are recognized for producing fruit of the very best quality; to have the trees, as far as conditions will permit, free from disease and insect pests; to grow trees in such localities and in soil where trees of the very best quality will be produced; to deliver to his customers only such stock as he would be willing to plant himself, and to pack the same in such a manner as will insure the arrival of the stock in the very best of condition. His obligation does not end even then, for there is still a greater duty to the customer, and that is to be in the position to render a definite service in advising him what to plant.

It may not always be possible for the Fancher Creek Nurseries to fulfill all of the ideals which I have presented, but it is safe for me to say that in the development of this business, with which I have been connected from my boyhood days, and with the experience I have had in the building up of orchard and vineyard properties, I am thoroughly equipped not only to give advice to my customers which will be of value to them, but to direct their efforts along lines which will lead them, if they adopt modern methods of culture to that success which they wish to achieve.

GEO. C. ROEDING.

THE ROEDING PLACE and FARMS:

640 acres, 6 miles east of Fresno.
Citrus Orchard and Nurseries:
320 acres, Exeter, Tulare Co.
100 acres, La Habra, Orange Co.

ORNAMENTAL NURSERIES:

160 acres, 2½ miles N. W. of Fresno.
20 acres, La Habra, Orange Co.
General Fruit Tree Nurseries:
160 acres, 18 miles east of Fresno.

TABLE OF CONTENTS

	PAGE		PAGE		PAGE
Agaves, Yuccas, etc.....	82	Evergreen Shrubs.....	71-77	Ornamental Department.....	56-86
Apples.....	7-8	Figs.....	29-32	Palms.....	80-81
Apricots.....	17-18	General Information.....	2nd Cover	Peaches.....	19-22
Bamboos.....	82	Grapes.....	41-46	Pears.....	9-10
Bedding and Border Plants.....	82	Index—California Native Plants.....	55	Planting Distances.....	6
Bulbs and Tuberous Rooted Plants.....	84	Index—General.....	95-96	Plums.....	13-14
Cherries.....	11-12	Index—Hedge Plants.....	55	Prunes.....	15-16
Citrus Fruits.....	35-38	Landscape Service.....	52-54	Quinces.....	22
Climbing and Trailing Plants.....	78-79	Miscellaneous Fruits.....	39-41	Roses.....	87-94
Crab Apples.....	8	Miscellaneous Supplies.....	3rd Cover	Reference Literature.....	95
Deciduous Ornamental Shrubs.....	61-64	Nectarines.....	23	Small Fruits.....	47-51
Deciduous Ornamental Trees.....	56-60	Nut Trees.....	24-28	Vegetables and Esculent Roots.....	51
Evergreen Trees.....	64-70	Olives.....	33-34	Weeping Deciduous Trees.....	61

FRUIT TREE DEPARTMENT



California—Where the Trees Produce Rich Returns and the Whole Family Engage in Pleasant, Healthful Work.

A Heart to Heart Talk

For several years we have issued a little booklet entitled "Roeding's Practical Planter's Guide." It has in a way served a purpose and has been the medium through which much valuable information has been imparted to our customers. As has been intimated in our introductory number, we feel we owe a duty to those who are good enough to favor us with their valued orders and following out this line of service we have decided to embody the information in the Guide in our regular annual catalogue. Our purpose is to enlarge on this from year to year.

With some exceptions, the cultural directions applicable to California will be found to be adapted to other countries and states as well.

The instructions given herein are from the pen of Geo. C. Roeding. We desire to say in his behalf that the statements and recommendations made are the result of almost 32 years' experience in the nursery business and in orchard and vineyard management.

Although Mr. Roeding's views are rather pronounced and he is regarded as a radical by a great many people, we wish to say that his own orchards and vineyards comprising one thousand acres in several counties in the State, embracing a number of varieties of fruits, all of which by the way are profitable properties, are a sufficient demonstration that the methods of pruning, culture, etc., are based on sound principles. Mr. Roeding is fortunate in possessing an open mind. He is not so wedded to his own ideas, that he is unable to learn from others. No one probably realizes more forcibly than he does that results are the only things that count.

If he has any one point in view in his recommendations in pruning it is to secure a maximum of production with a minimum loss of vitality in the trees, vines and plants, supplying the fruit. Mr. Roeding assumes the sole responsibility for all the directions given on the following pages. He desires to apologize for the personal tone injected in giving cultural directions.

FANCHER CREEK NURSERIES

OUR OPPORTUNITIES

California has a wonderful charm to those who have been born and reared in the State, and a magnetic attraction to people from all parts of the world, firstly, because of its prominence in the early days, due to the lure of gold, and now that this has taken second place, to its stupendous operations in horticulture and agriculture. Add to this its unique possibilities both in soils and climates, equally as attractive whether in the summer or winter, is it any wonder that so many people are looking forward with such an intense longing to be domiciled within its hospitable shores.

A veritable empire capable of supporting a population equal to that of Spain or Italy and containing more square miles than either of these countries, one begins to gather some faint ideas of its vastness. It contains 158,297 square miles and has a larger area than the following nine states combined: New York, New Jersey, Massachusetts, Rhode Island, Vermont, Maine, New Hampshire, Connecticut, Ohio. Having a shore length of 1,300 miles and average width of 250 miles, is it surprising that our great and fertile soils, our abundance of water from our unfailing streams even in dry years and the great variety of climates that we should possess such striking possibilities in horticulture?

We already lead every other state in the union in our output of horticultural products, nevertheless it is no exaggeration when I say we have only commenced to scratch the soil and very few except those who are closely in touch with the

situation, have any conception of the opportunities open to us. It must not be forgotten that the raising of fruit in California is a commercial business and although diversity in farming operations is to be commended, too much of this on a small place simply leads to trouble. Success is therefore dependent particularly on small acreages in devoting the property to that particular industry for which the soil and climate seem to be best adapted.

There also are many other considerations, which must be carefully weighed before a decision is reached by the man who intends to make a business of fruit growing. There is far too great a tendency on the part of so many people to plant the fruit which has been bringing high prices for several seasons utterly disregarding the fact that both soil and climate may not be conducive to making the venture a success. Since fruit growing began in California it is safe to say that a total failure of a crop has never been known. Probably this more than any other one cause, is the foundation for the building up and the many industries which have made this State, the equal if not the superior, to any other country in the world.

There are three fundamental conditions making this diversity in fruit growing possible.

The one feature above all others is the total absence of rain almost without exception from May 1st to October 1st. Second the variability in climate which even to me having been born and reared in California is at times almost unbelievable.

Just to illustrate the actual conditions I call attention to the records of the weather bureau on July 23, 1917. Fresno, maximum 104° Fahrenheit, minimum 72°. San Francisco, 82° and 52°; San Diego, 74° and 64°.

These figures are an index for the great variety of our fruit products.

Finally the third and last reason is our abundance of rainfall in the coast counties making it possible to grow fruit except the berry family without irrigation, maintaining the moisture in the soil by thorough cultivation. In the great interior valleys of the Sacramento and San Joaquin an abundance of water is secured from the great rivers having their source in the Sierra Nevada Range lying on our eastern border, its mountain peaks extending into the clouds and varying in heights from 10,000 to 14,000 feet.

This then leads me up to the point I desire to make: **That fruit growing in California is a pursuit worthy of any man no matter what his attainments may be.**

THE RIGHT BEGINNING

In these days a fruit grower should specialize. This does not mean that a man with his family living on a farm should not have a small home orchard, berries, vegetables, alfalfa, a cow, poultry and hogs. The facts are that if more of our orchardists would give closer attention to these details they could not only operate their properties more economically but derive much more pleasure than they now do from them.

PREPARATION OF THE SOIL

Our soils are essentially different from the soils of the middle west and eastern states in one particular and that is in the total absence of the clay sub-strata found elsewhere. All of our farming operations are therefore surrounded by conditions which are entirely at variance with other sections.

There is nothing which will add so much fertility to the soil, cause a more rapid development in trees, vines or plants than to devote the piece of land to be planted to fruit, to alfalfa for three or four years.

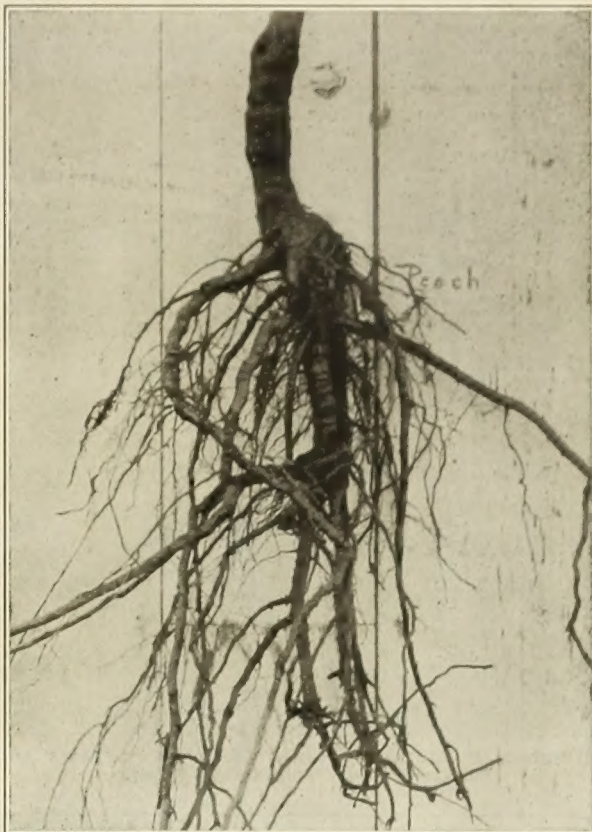
If then the soil is of a refractory nature, alfalfa will correct this trouble quicker probably than any other crop to which the land can be planted.

Its effect due to its deep root penetration is not only to disintegrate the soil, but add nitrogen to it, having the same faculty in this respect like all plants belonging to the pea family. When it is plowed under, it not only adds humus to the soil, but the decaying roots furnish a great abundance of plant food to the orchard or vineyard planted on the land. The raising of alfalfa on land is only practical where water for irrigation is available and where the grading can be accomplished at a reasonable figure.

It is of the utmost importance that the land be put in first-class condition to receive the trees. This is accomplished by thorough plowing followed by harrowing until the soil is friable. This work should be done in fall and early winter months before the rains set in if possible.

Nothing is so beneficial as sub-soiling, though planters are often disposed to avoid this additional expense, but where time and conditions will permit, it will do more to promote a fine deep root system and an unusually heavy growth, than any other one thing that can be done in the preparation of the soil.

Where irrigation is practiced grading must be resorted to, so that all spots will be accessible from the laterals running from the main ditch. Grading does not necessarily mean leveling, for the less the surface soil is moved the greater will be the ultimate success of the undertaking. No greater mistake can be made than to cut down the surface of the land for several feet in order to bring it under a ditch. It is far better under such conditions to pump the water from a ditch to the higher level and thus preserve the land. The slight additional expense of pumping will be more than counterbalanced by the growth of the trees and their fruitfulness as compared to the poor growth and lack of fruit when the surface soil has been removed to any depth. Drainage should be given con-



Typical Roeding Tree Showing Roots. Note Fine Union of Bud. Such Trees Grow.

sideration, particularly if the land is low and liable to have water stand too closely to the surface during the spring and summer months.

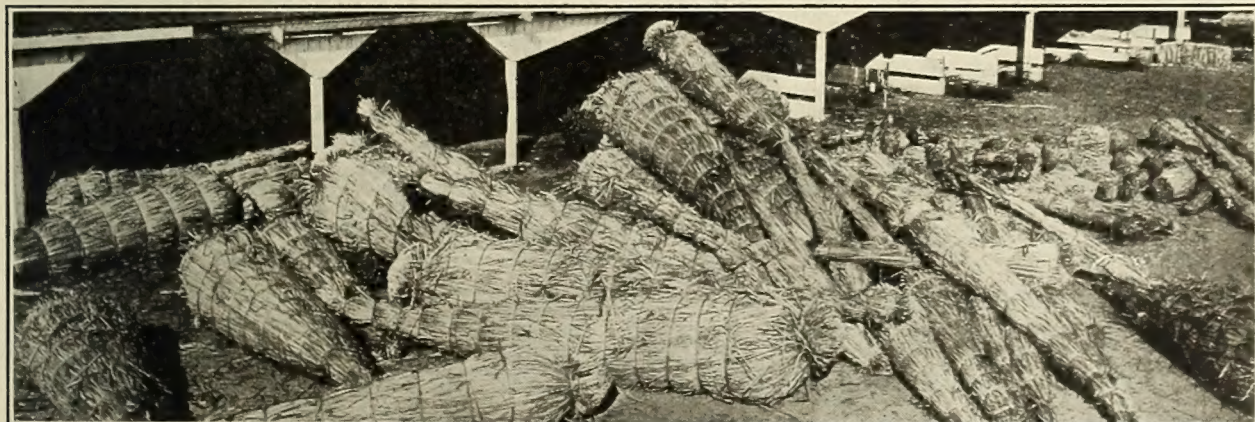
TIME TO PLANT

Fall planting is never desirable in California, because the growing season often extends into the month of November. It only rarely occurs that frosts are severe enough toward the latter part of the month to check the growth. The roots of trees dug before they have fully ripened up, turn black and the tree either starts very slowly in the spring, or does not grow at all. The best time to set deciduous trees is from January to April 1st, giving preference to the first two months. All evergreen fruit trees should be planted from February to May 1st, although in many localities, particularly sections of the State where the summer climate is cool, planting may be continued later than this.

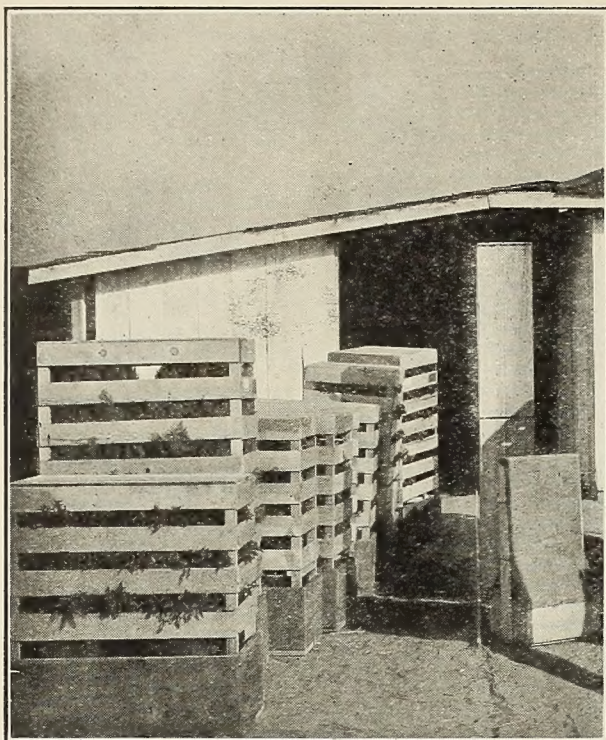
A safe rule to follow is to plant deciduous trees when dormant and those which are classed as evergreens as soon as the sap commences to rise in the spring.

SELECTING NURSERY STOCK

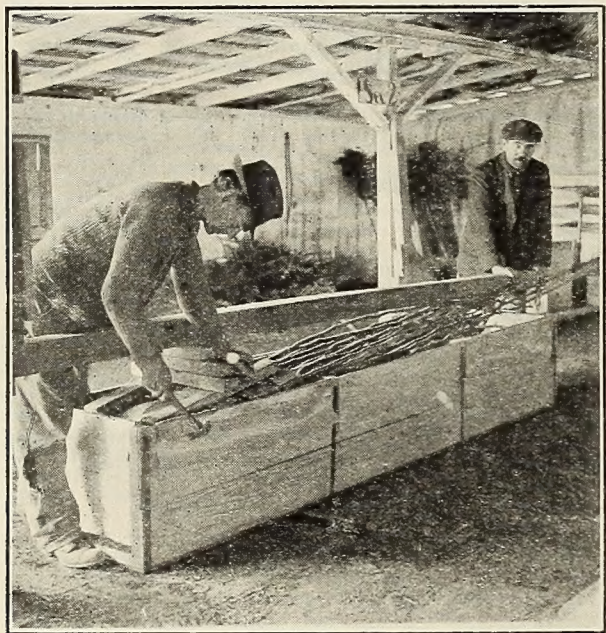
Never forget one point in buying trees, viz.: that when purchasing "Roeding True Trees" nursery stock, you are buying from a firm that has devoted nearly a third of a century to the practical study of growing the very best trees that money, study and an inherent love for perfection in a tree,



Part of One Day's Shipment. Thousands of Bundles of Tules are Used Each Season to Securely Pack Our Trees in Bundles Weighing up to 1200 lbs. Tules Make Exceptionally Fine Mats for Packing—Hold Moisture and Reduce the Cost of Packing to Customers.



Evergreen Plants and Trees are Shipped in Crates, and Packages Tops Protected by Burlap.



Deciduous Trees for Long Distance Shipments are Carefully Packed in Cases. This Simple Device is Used to Avoid Injury to Roots or Bark.

can develop. Remember also that, buying trees is different from the average merchandising. It is not today or the morrow that tells the story, but it is three or more years of hard work, in cultivating, irrigating, pruning, etc., before your fond hopes are realized. Then why not have Roeding Trees growing, and thriving, and finally rewarding your efforts with a wealth of delicious perfect fruit which Roeding-grown trees always bear?

From the planting of the seed to the time our trees reach our patrons, every care that human ingenuity can devise is carefully observed.

TREATMENT WHEN RECEIVED

The trees when received at point of destination should be immediately unpacked and the roots laid in a trench and well covered with soil, which should then be thoroughly wet down. If delayed in transit, thereby becoming dry and suffering from exposure (the bark showing signs of shriveling), it is a good plan to immerse the trees in a tank overnight and the following day bury root and top completely in damp soil for a few days until they become normal, when they may with safety be planted out. Should trees be frozen while in

transit, place the package in a cellar or some other place free from frost until thawed out, when they can be unpacked and heeled in, preparatory to planting. Trees treated in this manner will not be injured by having been frozen.

In localities where the seasons are very much later than ours, due to higher elevation or the difference in latitude, it is far better to permit us to forward stock while in the dormant condition. The shipment on arrival at destination should be examined by removing a board from the case, and if the roots appear to be in good condition the contents should remain undisturbed and the case should be placed in a cellar or in a cold storage plant, where the temperature should be maintained at about 35° Fahrenheit. This method of handling trees is thoroughly practicable, so much so that we have found it possible to ship trees to the antipodes during our winter season and have the shipment on arrival there placed in cold storage until the opening of the planting season.

PREPARING TREES FOR PLANTING

Just immediately before planting, be sure to examine the roots carefully, and cut away to a smooth surface all bruised, lacerated and broken roots and rootlets with a sharp knife or pruning shear. The cut on the larger roots should be sloping and made on the lower side of the root. The tree can now be said to be ready for its permanent orchard home.

If planting is delayed through circumstances beyond the control of the orchardist and a warm spell should intervene in February or March, causing the buds of the trees or vines to start, remove them from the trenches, shake out all the dirt from the roots and expose them for two hours in the early morning on a calm day to the rays of the sun. This will cause the small, white rootlets which have started, to dry up, and if the trees are heeled in, (wetting them down, of course) in a shady place their dormancy may be prolonged several weeks.

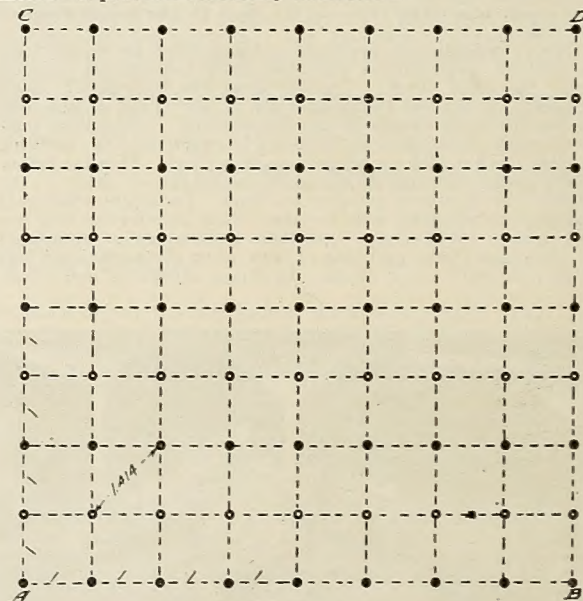
HOW TO PLANT

Planting Systems.—There are a number of methods of planting an orchard, but vineyards are usually set in the square system. In order to eliminate much of the confusion that seems to exist in the mind of the planter when deviating from the rectangular or square system, we are submitting plans drawn to a scale and are outlining under each one of them the plan of procedure. It is very important in laying off your ground to have straight lines, not only for the purpose of retaining symmetry in your orchard but also for the many other advantages in cultivating, irrigating, etc.

Explanation of Diagrams.—The planting distances are represented by the figure 1; all other related distances by multiple parts of 1, so that any desired distance on any of the diagrams may be obtained by the simple process of multiplying the desired planting distance by the distance indicated on diagram.

Square System.—One of the advantages of this system is that it permits cultivation in both ways, especially when the trees become larger. The trees are not equally distributed over the ground, however.

The first step to be taken in this and the following plans is to have your base lines at right angles. In planting a large place, these lines should be obtained by a transit. By studying the plans and observing the directions herewith given, the method of procedure is readily understood.



SQUARE PLANTING

Rule: Square Method.—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant or hill; which, divided into the number of feet in an acre (43,560), will give the number of plants or trees to an acre.

Lay off the base lines A B and A C along two sides of the planting field in such a manner that the angle at A is an exact right angle (90 degrees), and set stakes on said base lines the

desired distance apart. Care must be exercised to have all stakes on true lines.

A right angle can be formed in the field by the following method:

Lay off 30 feet from A along base line A B on the diagram, then a point on base line A C will be 40 feet from A and 50 feet from the other end of the 30-foot length.

After setting the stakes along the base lines at planting distance apart, the next step should be to set stakes along secondary lines drawn parallel with base lines A B, and such distances therefrom as will be multiples of the planting distance required, and at the same time no further apart than permitted by the length of the planting chain. This should preferably be of stranded wire No. 19 gauge and provided with numbered metal tags designed to be inserted at desired distances apart.

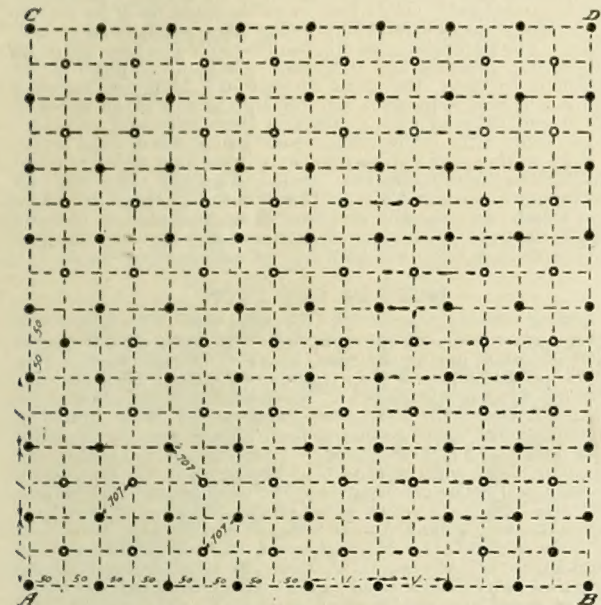
Experience has demonstrated that a 250-foot chain is the most serviceable. The chain should be stretched for several days before using to prevent too much variation in the field.

The chain should be provided with a ring and about two feet of surplus length of wire on each end for easy manipulation and stretching. Iron stake pins should be used to hold the chain in position. To do this properly it is advisable to lay off a temporary base line B D from end B of base line A B and at right angles thereto, setting flags on such temporary base lines at distances to correspond with the spacing of the secondary lines.

With the flags as a guide, lay off the planting stakes on the secondary lines, starting always from base line A C. Then all that is required to complete the staking will be to stretch the chain between similar points on the secondary lines and set the stakes at each tag on the chain previously adjusted.

Quincunx System.—The only advantage in this method of planting is in connection with using a filler temporarily, to be dug up as soon as there is any indication of crowding. This permits of double the amount of trees to the acre than in the square system.

Proceed to stake the field in squares. Then without the aid of a chain, place a stake in the center of each square. This is readily determined by sighting along the two diagonal rows of stakes at right angles to each other.



QUINCUNX PLANTING

Rule: Quincunx Method.—Multiply the number required to the acre "square method" by 2. The result will be the number of plants required to the acre by this method.

Hexagonal System.—This is the only one in which the trees are equidistant apart in every direction, every tree being at one point of an equilateral triangle.

The name "septuple," sometimes applied to this system, refers to the fact that the number of trees in each group unit is seven. Note hexagon on diagram.

To illustrate the plan to be followed, we will consider that the trees are to be set 24 feet apart. Then on base line A B set stakes 24 feet apart. On base line A C set stakes 0.866 times the planting distance apart or every 20.784 feet or (20 feet, 9 inches).

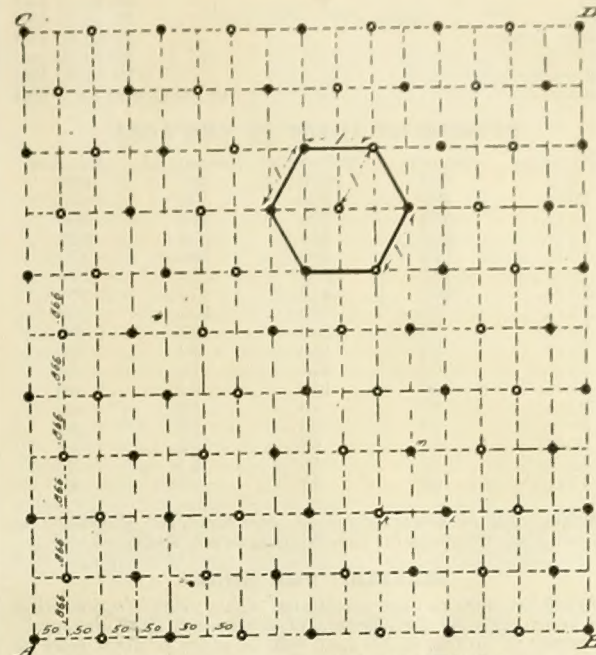
The first stake on the intermediate line, shown by the hollow circle on the diagram, should be 12 feet from the base line A C and 20 feet 9 inches from base line C D.

In using this method of staking, tags of two different colors should be used, one starting at zero and the other .50 times the planting distance from the zero end of the chain.

For the convenience of the planter we are giving herewith the distances between rows of trees, parallel with base line A B on the diagram, to correspond with various planting distances:

As an illustration, if trees are planted 18 feet apart on base line A B, the following row would be 15 feet 7 inches and correspondingly greater distance where the trees are to be planted further apart.

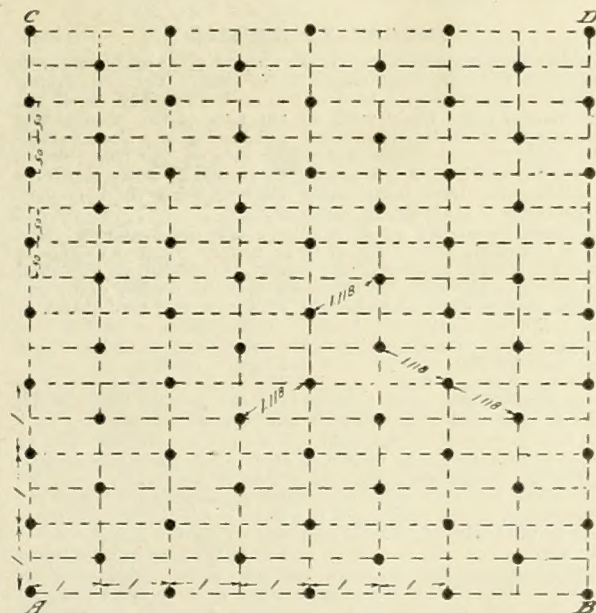
Base line A B 18 ft.	Secondary line 15 ft., 7 in. from A B
Base line A B 20 ft.	Secondary line 17 ft., 4 in. from A B
Base line A B 22 ft.	Secondary line 19 ft., 1/2 in. from A B
Base line A B 24 ft.	Secondary line 20 ft., 9 in. from A B
Base line A B 28 ft.	Secondary line 24 ft., 3 in. from A B
Base line A B 30 ft.	Secondary line 26 ft., 0 in. from A B
Base line A B 36 ft.	Secondary line 31 ft., 2 in. from A B
Base line A B 40 ft.	Secondary line 34 ft., 8 in. from A B



HEXAGONAL PLANTING

Rule: Hexagonal Method.—First, figure the number of trees required per acre by the "square method," using the same planting distance; then divide by the decimal .866. The result will be the number of plants required to the acre by this method.

Alternate System.—We will assume that the planting distance is to be 24 feet apart; and then all stakes on base line A B will be 24 feet apart. The alternate stakes on this line will be for temporary use only. In setting stakes on lines parallel with base A C, the tags of one color should be spaced 24 feet apart, commencing at the zero end. Tags of another color (for use on alternate lines) should be spaced 24 feet apart, commencing at a distance of 12 feet from the zero end of the chain.



ALTERNATE PLANTING

Rule: Alternate Method.—The number of plants required per acre by this method is the same as that required by the "square method" with similar planting distances.

PLANTING DISTANCES

	Distance apart each way
Standard Apples.....	25 to 30 feet
Standard Pears.....	24 to 30 feet
Dwarf Pear.....	12 to 15 feet
Strong-growing Cherries.....	24 to 30 feet
Duke and Morello Cherries.....	18 to 24 feet
Standard Plums and Prunes.....	24 to 30 feet
Peaches and Nectarines.....	24 to 30 feet
Apricots.....	24 to 30 feet
Figs.....	25 to 35 feet
Olives.....	30 to 35 feet
Citrus Trees.....	22 to 30 feet
Walnuts.....	40 to 50 feet
Almonds.....	24 to 30 feet
Grapes.....	6x6, 6x12 and 8x10 feet

NUMBER OF TREES TO THE ACRE

Distance	Square	Quincunx	Hexagonal	Alternate
8 ft.	680	1360	785	680
10 ft.	435	870	500	435
12 ft.	302	604	349	302
14 ft.	222	444	255	222
16 ft.	170	340	196	170
18 ft.	134	268	154	134
20 ft.	109	218	124	109
22 ft.	90	180	104	90
24 ft.	75	150	87	75
25 ft.	70	140	80	70
26 ft.	64	128	74	64
28 ft.	56	112	64	56
30 ft.	48	96	55	48
32 ft.	43	86	49	43
36 ft.	34	68	39	34
40 ft.	27	54	31	27
45 ft.	22	44	25	22

Note.—All of these figures are not exact for planting one acre, but are intended for the planting of a multiple of acres.

BLASTING THE HOLES

Much interest has been manifested of late years in dynamiting the holes prior to the planting of the trees. It is absolutely necessary to do this in hardpan soils in order to plant trees at all. On the Roeding Place, we have a ten-acre tract in our 200-acre Calimyrna fig orchard in which the hardpan varied in depth from 6 inches to 2 feet from the surface where the holes were blasted. The trees in this orchard are now 13 years old. They have made a remarkably fine growth and have by far outstripped the trees in another part of the orchard growing on a sandy, loamy soil.

It has been the practice not to blast where the hardpan came within 3 feet of the surface, but actual experience has demonstrated that not only striking and remarkable development in the growth of trees had been secured by blasting where hardpan was found, but in any soil of a heavy, compact nature. It does not take much of a stretch of the imagination to comprehend the fact that a thorough disintegration of the soil, permitting the roots to ramify in every direction, will promote a rapid root and top growth. The drilling of the hardpan is carried on very expeditiously now-a-days by the use of a power drill mounted on a wagon.

IMPORTANT DETAILS

As has been suggested previously, above all things have your ground in the very best condition of tilth. The importance of this one point cannot be dwelt upon too forcibly, for it not only insures more rapid work on the part of the men setting your trees, but in addition to this, not having any clods to contend with, the fine loose soil packs around the roots, when tamped in, and if for any reason there should be no opportunity of settling the trees with water after planting there is very little danger of their drying out.

A stake about half an inch square and one foot long, split out of redwood, will be found to be a very convenient size as a marker for the setting of the trees. Dip about six inches of one end in whitewash, as they can then be readily seen, and should any of the stakes be out of line it will be noticed at once. Before digging the holes it is necessary to have a tree setting board. This is easily made out of a piece of 1x4-6 feet long with an inch hole at each end and a notch in the center. Place the notched center against the stake where the tree is to be planted and push a stake into the ground through the holes at each end of the planter and remove the center stake. The hole may now be dug and this should not be less than 18 inches in diameter and 18 inches deep. After the hole is dug, replace the board over the end stakes in its former position, then plant the tree with the trunk end resting against the center notch in the board and it will be in identically the same place as the stake which was removed to dig the hole.

In setting out, one person should hold the tree in an upright position against the notch in the tree setter, while another shovels or fills in the loose soil around it, first spreading out the roots and rootlets in as natural a position as possible. The surface or friable soil should be put in first among the roots, care being taken to fill in every interstice, thus bringing all the roots in direct contact with the soil. When the hole is two-thirds full, firm the earth thoroughly about the roots, but before doing this draw the tree up to its permanent position. The top three to four inches of soil should not be tramped. A



Planting Board

basin should be scooped out around the tree which will hold at least 15 gallons of water, and unless heavy rains should intervene to fill it up, water should be applied either by bucket or by irrigation. The following day draw in loose soil to fill up this basin, reducing it to a fine condition of tilth and do not tramp in. Guard against setting too deeply, but allow for the settling of the soil, so that when once established the tree will stand about as it did at the time of removal from the nursery rows, or at the outside not more than three inches below the surface of the soil. In the hot interior valleys of this State, it is also very important to protect the trunks with tree-protectors until they can supply their own shade.

BRINGING AN ORCHARD OR VINEYARD INTO BEARING

Just in the proportion that the orchard receives intensive and intelligent care, will it give corresponding returns for the investment of capital, time and labor. Above all things, do not plant too many varieties if you desire to be a factor in the business. As an illustration, it is a mistake to have a different variety on each acre, for when this orchard comes into bearing there are so many varieties and so limited a quantity of each that the commercial packer of dried or canned fruits does not feel inclined to pay what the fruit is worth, because there is not enough of any one kind to make it an object for him to handle it.

The handling and marketing of fruit has assumed such vast proportions that there are always commercial institutions eager enough to enter a new field, and exploit it as soon as the production is large enough to encourage the building of packing houses for the handling of any particular product. Another serious mistake on the part of many growers is to endeavor to harvest big crops when their trees are only two years old. The result of this unwise policy is in many cases to sacrifice the tree to such an extent that just when it should be bringing profitable returns it was burdened too heavily when young, and in consequence either dies when it should be in its prime, or it takes years of extraordinary care to restore it to its proper vigor. The care bestowed for the first two or three years in cultivating, pruning and irrigating, where the rainfall is insufficient to carry the trees through the long dry summer months, is the foundation for the upbuilding of an orchard which will redound to the credit of the owner and give him ample returns for his intelligent care and years of hard work.

Next to thorough cultivation there is nothing which is more vital to the life of a tree than proper irrigation. It is difficult to lay down specific rules on this point, but there are basic ones which can generally be observed in the handling of most deciduous trees, with some exceptions, and instructions pertaining to such cases will be dwelt on under proper heads.

MUST BE CUT BACK

After a tree is set never fail to cut it back. This is now the general practice among the most successful orchardists throughout California, and is the result of years of experience. The following winter from three to four branches, properly distributed around the body of the tree, should be allowed to remain to form the head, and each one of these branches should have at least one-half of their growth removed, cutting away all laterals from them also. These leaders will eventually form the frame work of the tree. The result of the first year's pruning will cause the trees to make an immense growth and will also induce them to grow stocky. The second winter heavy thinning will have to be followed and the pruning should be done with a view of causing the framework branches to spread out. There may be some variation from these instructions, therefore it is advisable to read carefully the information given under each head. The many advantages of this method of pruning are: (1) It makes a low-crowned and a more stocky tree, affording an umbrageous head, and thus protecting it from the hot rays of the scorching summer sun; (2) it enhances the carrying capacity of the tree, thus avoiding artificial props when maturing a crop of fruit; (3) it expedites the harvesting of the crop, by rendering it more accessible to the pickers, thus economizing time and expense; (4) it prolongs the life of the tree by reason of conserving its vital forces, and rendering it less liable to damage in the breaking of limbs and taxing its strength by carrying its fruits "close in."

IRRIGATION

To go specifically into the subject of irrigation is not within the province of this book. Soil conditions bear a very important part in the particular plan, which should be followed to secure the best results. Where water is pumped from wells experience has demonstrated that cement pipes are more serviceable for carrying water to the point where it is to be distributed than anything else.

During the first season for deciduous trees in districts where irrigation is practiced, water should be applied not less than four times during the year. For the first two years it is not necessary to irrigate all of the ground between the rows. A space six feet wide will answer the necessary requirements in nearly all cases.

The planter should never lose sight of one important fact, and that is, if the orchard or vineyard can be maintained in a thrifty, vigorous condition that thorough cultivation is recommended as being preferable to irrigating.

THE APPLE

In the temperate zone no variety of fruit is so widely distributed or has been more extensively planted than the apple. The list of varieties is amazing. "Downing's Fruits" alone lists about 3,500 sorts. Following out the rule, we have scaled down our list of varieties, cataloging only such kinds having distinct characteristics and of value either for home use or from a commercial standpoint. New varieties are never added to our list, unless we are convinced they possess points which make them worthy of cultivation.

Varieties are variable as to localities and in planting in sections where apple culture is pursued commercially, the advice as to the best varieties to plant should be sought from experienced growers. Broadly speaking, the hot interior valleys are not suitable for commercial apple culture on a large scale, as the very rapid and early maturing of the fruit does not seem to be conducive to long keeping, as found in tried localities where conditions are favorable for perfecting fruit having long keeping qualities. Nevertheless it is a fact that where moisture is readily maintained in a soil by either irrigation or by sub-irrigation, many varieties are of such exceptionally large size, present so fine an appearance and are of such excellent flavor that more attention should be given to their culture.

SOIL AND SITUATION

The best soil for this fruit is a deep, rich loam which will allow the free extension of the roots and is exempt from stagnant moisture. An extremely light soil should be avoided. Apples do exceedingly well in all the coast counties, as well as in the upper foothills and mountains of the Sierra-Nevada. In adjacent states and territories to the north and east, apple culture is more general, and may be safely followed wherever the soil and climate is favorable. The keeping qualities and the flavor and coloring of our mountain-grown apples at elevations of 3000 to 5000 feet or more, are indeed hard to surpass.

DISTANCES APART

It is the consensus of opinion among commercial growers that trees should be planted from 25 to 35 feet apart in orchard form. Crab Apples may be planted closer. Trees should be cut back to 20 inches from the top of the ground after being set, except in the higher altitudes, where the snow in settling would cause the branches to break off, thus making it advisable to head the trees at not less than 2 feet from the ground. Apples are very much subject to sun scald and to the attack of the flat headed borer, the first few years after trees are set out.



Mr. Roeding Pruning a Four-Year-Old Apple Tree, Showing His Idea of Pruning and Bringing up a Well Shaped Tree.

When headed low, protected with tree protectors, permitting of free circulation of air, and by giving the stem a coating of whitewash to which has been added soap and crude carbolic acid, little danger need be apprehended from either of these evils. The wash is made in the following manner: Dissolve one-half gallon of soft soap in one-half gallon of hot water, adding one-fourth pint of crude carbolic acid. When mixing add five gallons of hot water and enough lime to make a mixture the consistency of paint.

SHAPING THE TREE

In forming the head of the tree no branches closer than one foot from the surface of the ground should be allowed to grow. The following winter they should be cut back at least one-half and thinned out so as not to leave more than four branches to form the frame-work, and these should be distributed in such a manner as not to crowd one another as the tree develops. Each one of these branches should be regarded as a subdivision to maintain the wood supply to eventually form a perfectly vase formed tree. The second winter not more than two laterals should be allowed to remain and if there is a tendency to crowd, not more than one on the framework branches, and their growth should be again shortened very severely. The tendency as far as possible should be to prune to an outside bud for the first two winters' pruning. With the head now practically formed, the orchardist must shape the tree in accordance with its development, leaving and shortening in the inside laterals if they show a tendency to spread out, or if the inclination is to assume too upright a form, cause them to spread by leaving the outside laterals. The cutting back of the trees and judicious thinning prevent the long bare branches so noticeable in trees which have not been systematically pruned every winter. The effect of this method of pruning is to cause the structural branches to be sturdier, the load of fruit is carried closer to the trunk and even with a very heavy crop of fruit the necessity of propping is eliminated very largely. Props are an expensive item and they also interfere very materially with the harvesting of the crop, so that a method of pruning which will dispense with them is worthy of very careful consideration.

Apples—Prices and Varieties

Our list includes all the desirable varieties for home and commercial planting on the Pacific Coast. Many varieties which cannot be recommended for commercial planting in all sections may be safely selected for the family orchard from the earliest to the latest sorts.

	EACH	10	100	1000
1 year.....2 to 3 ft	\$0 25	\$1 50	\$12 00	\$100 00
1 year.....3 to 4 ft	30	2 00	16 00	140 00
1 year.....4 to 5 ft	35	2 50	20 00	180 00

Alexander. Large; yellow, streaked red. September.

***Arkansas Beauty.** A large crimson apple; sub-acid; flavor very good; strong grower and heavy bearer. November to April.

***Arkansas Black.** Valuable market variety; maroon, nearly black. December to April.

Baldwin. Deep red. This old standard is still a very popular variety. Its large size and red color, combined with its crisp, juicy flesh cause it to be in very good demand. November to February.

Ben Davis. Yellow, streaked red. October to January.

Bismarck. A very prolific bearer and comes in earlier than any other variety. Large; golden yellow with red cheek. Good cooking and eating sort. September.

***Black Ben.** Improved Ben Davis. Deep dark red; regular and prolific bearer. October to April.

***Delicious (New).** Brilliant dark red with splashes of a golden yellow at the blossom end. Flesh fine-grained, highly flavored. As a market and table apple it has few superiors. November.

Duchess of Oldenburg. Yellow, streaked red; adapted to hot, dry climates. July.

Early Harvest. A favorite apple in July. Medium size, pale yellow; juicy and very much prized for eating out of hand and cooking. Tree heavy bearer. July.

***Esopus Spitzenburg.** Striped red and yellow; bright red; good. A standard in the leading apple sections of the Pacific Coast. November to March.

Fameuse or Snow. Greenish yellow, striped red; flesh remarkably white. October.

***Gravenstein.** Large; striped red and orange. Most popular early variety on Coast. August.

Grimes Golden Pippin. A most beautiful apple; golden yellow, sprinkled with gray dots; very distinct and highly flavored. December to March.

APPLES—Continued.

***Jonathan.** Yellow, covered with red stripes; great table and market variety, good keeper and productive. October to December.

***King David (New).** Fruit large, wine-red, blotched yellow. Its high color and delicious flavor are causing it to be a winner. October.

***King of Tompkins County.** Very large, flesh yellowish, rather coarse, juicy, with a rich vinous flavor; particularly adapted to mountain regions. September to October.

Lawver. Showy bright red; great shipper; suitable for warm, dry climates. December to May.

***Maiden's Blush.** Large; solid yellow with brilliant red cheek; flesh white, tender, with sprightly sub-acid flavor—a valuable late summer apple. August.

Mammoth Black Twig (Paragon). Large; dark red; good keeper. November to January.

***Missouri Pippin.** Yellow; striped red. December.

Marshall Red or Red Bellflower. Very large; shape of Yellow Bellflower, but with color of Red June. Quality best. Very popular variety. October.

Northern Spy. Greenish yellow striped purplish red; productive; late keeper. November to April.

Rambo. Medium, yellowish-white, streaked with pale yellow and red; tender, rich and sub-acid; very productive. A widely cultivated and esteemed old variety. October.

***Red Astrachan.** Large; deep crimson. A popular and productive early market variety, adapted to interior valleys. July.

Red Beitigheimer. Large; cream-colored, flushed with light and dark red. September.

***Red June.** Deep red; very showy. One of the best early apples. June.

Rhode Island Greening. Adapts itself to almost any locality. Tree a strong grower and heavy cropper. Greenish-yellow; flesh yellow; fine grained. October.

***Rome Beauty.** Large; exceptionally beautiful; yellow, shaded and striped with red. One of the most popular varieties. November to February.

Smith's Cider. Large and handsome; yellow, shaded red. November to February.

***Stayman's Winesap.** Greenish yellow, splashed with red. Fine market apple. January to May.

***White Astrachan.** Greenish white; very showy; increasing in popularity. July.

***White Winter Pearmain.** A leading variety in late Autumn. Large, roundish, conical; greenish-yellow shaded red; highly flavored, tender and juicy. A favorite commercial variety. November to January.

***Winesap.** Not only an excellent keeper but an all around good market and table variety. Medium yellow, mostly streaked and splashed with red. Flesh highly flavored; rich, firm, crisp. November to February.

Winter Banana (New). Fancy market and table fruit; large; pale yellow; rather tender, not a long keeper, pink blush. November.

***Yellow Bellflower.** Large, oblong; yellow; a standard in California. October to January.

***Yellow Newtown Pippin.** Large; golden yellow; extensively planted in California. A commercial sort which will always be in great demand on account of its many excellent qualities. January to May.

Apple Trees—"Apple trees received in good time. I am much pleased with trees; they are even in size, well put up and an exceptionally fine lot for yearlings. Thanking you for care in filling this order, I remain,"

C. H. HUTCHINS, Santa Cruz Co., Calif.

"Those trees that I got from you twelve years ago have as fine a lot of apples on as you would wish to see."—Peter Marx, Yavapai County, Ariz.

THE CRAB APPLE**Prices and Varieties**

	EACH	10	100
1 year.....3 to 4 ft.	\$0 30	\$2 00	\$18 00
1 year.....4 to 6 ft.	35	2 50	20 00

Hyslop. Fruit large, deep crimson, thick blue bloom. Tree vigorous, heavy cropper. September.

***Red Siberian.** Yellow, with scarlet cheek. Bears early and abundantly. September.

***Transcendent.** Fruit very large; yellow striped red. Productive. September.

***Whitney No. 20.** A vigorous grower; great bearer; fruit large, smooth, glossy green, striped and splashed with carmine; flesh firm, juicy. August.

***Yellow Siberian.** Beautiful golden yellow. August.



A Block of One-Year Apple in the Fancher Creek Nurseries. These Trees Will Please Every Buyer.

THE PEAR

The pear is a fruit cultivated throughout California and the Pacific States generally, extending into Mexico. It does well in all soils, but succeeds best on a heavy loam. Of the whole range of commercial fruits it seems to thrive in alkali soils and is being largely planted in vineyards and orchards where the vines and trees have been killed. Pears are planted from 24 to 30 feet apart; on quince root, 12 to 15 feet apart. Pruning is usually to the vase form of tree. The fruit should be thinned out on heavily loaded trees or else it is liable to run to small and unmerchantable sizes. The fruit of summer and autumn sorts should be gathered at the first indication of ripeness, the first sign being the tendency of the stem to part from the spur when the pear is gently raised. Late pears should hang as long as possible; a slight frost will not injure them as much as premature gathering. They should then be placed in a dark, cool place, where they will ripen, acquiring a delicious aroma, fine flavor and a melting characteristic pleasing to the palate when eaten. The demand for this fruit both in the green and dried state is increasing yearly, and there seems to be no ground to fear over production.

PRUNING AND SHAPING

The very marked tendency of the pear to form its branches straight up requires a method of pruning which will not only hold the tree in control but will promote fruit spurs from the framework branches to the very top of the tree. It goes without argument that this is the desideratum which every pear grower would like to achieve. For a number of years while passing on the train from Lawrence station to San Jose on the Southern Pacific Company Railroad, my attention was attracted to the Bartlett Pear orchard of Bracher Brothers, two miles from Lawrence station. The symmetry of the trees gave evidence that the pruning was being carried on along lines which not only maintained active growth in the trees, but strong, vigorous fruit spurs capable of carrying very heavy crops. The oldest orchard is over twenty-five years of age, is in the very best of condition as far as vigor and fruitfulness is concerned and fully exemplifies the rare good judgment exercised in pruning.

It is not all uncommon for our pear trees to grow 10 feet high in a single season. To many growers it seems a crying shame to cut such trees off after they are set, to 20 inches from the ground. Our yearling trees having plump and well defined buds all the way up the stem every one of which will start if permitted to do so, should eliminate any doubt in the growers mind that the tree will not start if cut back as severely as this.

In midsummer, just before the wood begins to harden, from four to five branches well distributed around the stem of the tree, should be selected and then pieces of wood from three to six inches long and slightly notched to hold them in place should be arranged to push the branchlets away from the body of the tree.

In order that the reader may not become confused in his ideas as to the time of performance of the method of pruning followed by Bracher Brothers, I will consider for the sake of argument that the orchard to be pruned was planted in the spring of 1917. In January, 1918, four branches regularly

distributed around the tree three to four inches apart should be selected, counting from the terminal one at the tips end to constitute the framework branches. All of these branches must be cut back so that they do not exceed six inches in length. If any of them show a tendency to hug too closely to the body of the tree the wooden braces should not be overlooked. In other words the branchlets should be forced outward without interfering with their upward course. In 1919

One-Year Pear Tree Pruned, Demonstrating Method of Distributing Branches; Also Simple Device, Causing the Framework Branches to be Pushed out from the Body of the Tree.



STOCKS FOR THE PEAR

We do not recommend the extensive planting of pears in the interior valleys of California on account of blight. We are growing the most of our pear trees on the Japanese Pear Root on account of its greater adaptability. These seedlings are very much stronger growers and adapt themselves to a great variety of soils.

The quince is used as a stock because it causes the pear to become dwarf in habit and permits the planting of trees closer together. It is no uncommon sight to see trees three feet high loaded with an abundance of pears. The Bartlett in particular and many other varieties of pears will not make a good union when budded direct on the quince; it has therefore been found necessary in nursery practice to bud the Beurre Hardy Pear, which has a remarkable affinity for the quince, and then bud or graft the other varieties of pears on this variety. This is what is known as double working.



Four-Year-Old Bartlett Pear Tree, Demonstrating Upbuilding of the Tree. Note Strong Leader in Center with Numerous Laterals. In Later Years when Tree is Heavily Loaded with Fruit, Wire Braces are Fastened to this Leader Extending out to Various Laterals, Preventing them from Breaking.

Five-Year-Old Bartlett Pear Tree with Character of Tree Fully Established.





General View of Eight-Year-Old Orchard Pruned Along Line Recommended.

the new growth starting from these branches should be pruned back at least one-half with the exception of the terminal which should have its growth shortened in one-third. At least one lateral starting midway on the framework branches should remain, not overlooking the fact that two-thirds of its growth is cut off. In 1920 again the new growth should be severely cut back leaving the leaders longer and at this time several new laterals are allowed to remain properly distributed on the main branches, cutting off in turn at least one-half of their growth.

In 1921 the same method of shortening in and building up the frame of the tree is followed.

In later years the general policy of pruning continues with the only alternative that the cutting back of the tree is regulated by its growth.

As a result of this pruning fruit spurs are developed from the point where the framework branches diverge from the body of the tree to its very top.

The fruit is very evenly distributed and in years of enormous crops the leader is used for stringing wires to prevent the lateral branches from breaking down with their load of fruit.

Pears—Prices and Varieties

On Pear roots:

	EACH	10	100	1000
1 year... 1 to 2 ft.	\$0 25	\$2 00	\$12 00	\$100 00
1 year... 2 to 3 ft.	30	2 50	16 00	140 00
1 year... 3 to 4 ft.	35	3 00	22 50	200 00
1 year... 4 to 6 ft.	40	3 50	27 50	250 00
1 year... 6 to 8 ft.	50	4 00	32 50	300 00

***Bartlett.** The leading commercial pear of California for canning, shipping and drying, and more extensively planted than any other. Large; golden yellow, red cheek; thrives in all parts of California. August.

***Beurre Clairgeau.** This very fine pear is deserving of being planted more extensively than it has been in late years. An enormous bearer of large, highly colored pears. Flesh melting, highly flavored. Good shipper. September.

Beurre d'Anjou. Large; russet yellow, shaded with crimson; juicy and delicious; fine for table and market. September.

***Beurre Hardy.** Large; greenish, covered with light russet. Flesh buttery. September.

***Crocker Bartlett (New).** Fruit oblong, acute, pyriform; large; rich golden yellow; netted and overspread with russet. Flesh is yellowish, buttery, juicy, sub-acid to sweet and rich flavor. Is rather acid until dead ripe. Tree a wonderfully vigorous grower. November to February.

Dana's Hovey (Winter Seckel). Skin greenish-yellow, netted with russet. Flesh yellowish, juicy, with rich aromatic flavor. Heavy bearer. November.

***Doyenne du Comice.** Very large, regular type form; greenish-yellow, shaded crimson; very rich, melting, buttery and juicy. As a shipping pear is running a very close second to Bartlett. October.

***Easter Beurre.** Large, roundish; fine-grained; most desirable. October to January.

Forelle or Trout. The few pears of this variety which have reached the Eastern markets have been gobbled up so quickly at very high prices, indicates its value as a market pear. Large, oblong, pyriform, yellow marked with red and covered with large gray dots; flesh rich, buttery, fine-grained and very melting. September and October.

***Glou Morceau.** Pale greenish yellow, marked with small green dots; flesh fine-grained, with sugary flavor; fine shipper. December.

Howell. Medium; yellow, with minute russet dots. Immensely prolific. August.

Lawson or Comet. Large; bright crimson on yellow ground; good shipper. June.

Le Conte. Tree a wonderful grower, with rich, luxuriant foliage. Fruit large, bell-shaped; skin smooth; rich creamy, yellow color; fine for shipping and excellent for cooking. July.

P. Barry. Large; yellow; juicy, fine-grained; excellent keeper. Tree vigorous grower and heavy bearer. December to March.

***Seckel.** An exquisite pear possessing a distinctiveness of flavor which always identifies it. Brownish-green with russet brown cheek. Flesh rich, unique and very spicy. August to September.

***Winter Bartlett.** Large; yellow, slightly russeted on one side; tender, juicy. Flavor almost identical with summer Bartlett. One of the finest winter varieties, but we do not recommend it for the hot interior valley. November.

***Winter Nelis.** Medium; yellowish green, gray-russet dots; flesh yellowish white; excellent shipper. An old standard, recognized as one of the best winter pears. December.

Pear Budded on Quince Roots

"Double-worked" on **Beurre Hardy** Pear

	EACH	10	100
1 year..... 2 to 3 ft.	\$0 35	\$3 00	\$25 00
1 year..... 3 to 4 ft.	40	3 50	30 00
1 year..... 4 to 6 ft.	50	4 00	35 00

Bartlett. For description see Pear on Pear roots.

Beurre Bosc. A large fine pear with long neck; cinnamon-russet, handsome; half melting, juicy, slightly perfumed and delicious; tree fine grower and productive; one of the most valuable of our autumn pears. September.

Beurre Clairgeau. For description see Pear on Pear roots.

Beurre d'Anjou. For description see Pear on Pear roots.

Beurre Hardy. For description see Pear on Pear roots.

Doyenne du Comice. For description see Pear on Pear roots.

Easter Beurre. For description see Pear on Pear roots.

Flemish Beauty. Large; pale yellow; good bearer; hardy. September and October.

Glou Morceau. For description see Pear on Pear roots.

P. Barry. For description see Pear on Pear roots.

Winter Bartlett. For description see Pear on Pear roots.

Winter Nelis. For description see Pear on Pear roots.



A Well Pruned Pear Tree, Showing Mass of Bloom from the Crotch to the Very Top. A Tree Like this Under Ordinary Care Should Produce No Less than 500 Lbs. of Fruit.

THE CHERRY

Strictly speaking the sections in which cherries can be grown seem to be limited to the counties adjacent to the San Francisco bay region, although there is no doubt that in many of the counties north of the bay and receiving the benefit of the tempered sea air, that cherry growing should be engaged in. The enormous profits realized from cherry orchards and the popularity of the fruit in the east; the very excellent keeping qualities of many of the varieties, even when picked quite ripe, present a series of reasons for extending the field for the planting of cherries over a greater territory.



Left—Two-Year-Old Cherry Tree Cut Back, Demonstrating Clearly the Method of Topping Tree to Secure Well Balanced Head. White Spots Show Where Tree was Cut Back First Year. Right—Four-Year-Old Black Tartarian Cherry Loaded with Fruit Spurs Showing a Well Balanced Tree Due to Proper Pruning.



Six-Year-Old Cherry Tree. Note Fruit Spurs that Appear All Over Main Limbs, Demonstrating the Advisability of Annual Pruning of the Cherry.

Being the initial stone fruit of the season probably accounts in a way for its popularity.

Exceptionally fine cherries are grown in Oregon and Washington. California's advantage over these two states is not so much in the quality of the fruit as it is in the time of ripening. Our season is from May 1 to June 15, while in the more northern states the season opens on the latter date and closes about July 15th. In the upper San Joaquin valley, notably around Stockton, in many sections of the Sacramento valley, and in the foothill sections adjacent thereto, cherries are grown quite successfully in the alluvial soils. Around Fresno, cherries should only be planted for home use, giving the preference to the Morello types. Cherry trees should be planted 18 feet apart at the very least and on exceptionally rich soils, 30 feet would be better.

STOCKS FOR THE CHERRY

For years it has been absolutely fixed in the mind of planters and many of them experienced growers, that the only root for the cherry in California is the Mazzard (*Cerasus avium*.)

According to all reports, the Mahaleb root (*Cerasus odorata*) which is extensively used in the East for growing cherries, would not do in California and nurserymen, because of the prevailing prejudice, have hesitated to use it. While on a tour of investigation in Solano county last spring and summer, I found to my surprise in the Vacaville district several young orchards and one old orchard of forty years or more where the sweet cherries on this root were not only very thrifty, but even producing very heavily on the Mahaleb root. One of the most experienced growers in the valley, Mr. H. A. Bassford, said that his preference for this root was due to the trees being longer lived; greater prolificness and the evident influence of this root on the growth of this tree.

The dwarfing tendency so often attributed to the Mahaleb, is not borne out by observation; on the contrary, its effect is to give the tree a greater bearing surface and its influence is more in the direction of preventing the excessive growth of the branches. Possibly the loss of trees which many growers have sustained, through sour sap, may be due to the use of the Mazzard root. That the Mahaleb is a more vigorous grower and has a much better root system is generally recognized by all nurserymen.

PRUNING

It is simply disheartening to see some of the unpruned cherry orchards in Solano county which stand out pre-eminently as the most important cherry section in the State today. Compare the quality and quantity of fruit produced with the trees that have been systematically pruned and the whole fallacy not to cut a cherry tree after the head has once been formed falls to the ground. See page 12.

The trees should be headed back to 24 inches. Three to four branches should be allowed to grow to form the head of the tree and these should be distributed in such a manner as to prevent forks, as the tree has a tendency to split as it grows older. The first winter these branches should be cut back one-half and the following season not more than one to two branches should be allowed to grow from those left the first year. The third season the new growth should be shortened in about the same, depending on the growth, and some of the laterals appearing near the point of divergence from the main stems should not be cut off but merely shortened in, for the shade they furnish is one of the essential features in the development of the young trees. This same method of pruning should be followed until the fifth year. In after years the cutting should be less severe, but pruning, unless the trees should show too much of a tendency to spread out, should continue every year. This promotes fruit spurs on the large as well as on the smaller branches and in harvesting a crop the even distribution of the cherries from the bottom to the top of the tree cannot but help bring about a feeling of pride in the mind of the grower over the results obtained. There are cherry trees in the Ulati Ranch property near Vacaville, managed by Mr. H. A. Bassford, where with one or two exceptions, one of the cherry orchards now fifteen years old consisting of Bing, Lambert, Royal Ann, Black Tartarian, where pruning has been carried on annually. The trees in the particular orchard are simply beauties and many of them had during the past season no less than 500 pounds of cherries fit to ship in May, 1917. The Gummosis, a gum disease, has been overcome in this orchard by slashing the body and framework branches every other year in November.

In this same orchard the cherry trees bore indifferently for some years. This has been corrected by the placing of a large colony of bees in the orchard. These bees carry on the work of pollination, causing the trees to bear heavy crops regularly each year.

Not only do they benefit the cherries but undoubtedly are responsible for the splendid crops of other fruits which are harvested annually on this large fruit ranch.

We believe the placing of a colony of bees in any orchard will be found a splendid investment.

Cherries—Prices and Varieties

On Mazzard roots:	EACH	10	100	1000
1 year...2 to 3 ft.	\$0 30	\$2 50	\$16 00	\$140 00
1 year...3 to 4 ft.	35	2 75	20 00	160 00
1 year...4 to 6 ft.	40	3 00	25 00	200 00

Except Burbank and Abundance—see special prices

The Hearts, or Bigarreus, are the sweet Cherries, the trees being strong and vigorous growers. These are designated by the letter "H"; the Dukes, or Morellos, which are the sour Cherries, by the letter "D." These grow slowly, the branches are slender; the leaves are thicker, smaller and of a deeper green.

***Bing. H.** One of the grandest blacks. Its large size, firmness and delicious flavor have caused it to be in active demand. A thrifty grower. A shy bearer as a rule, but this has been overcome by mixing it with other varieties, particularly Lewelling. Middle of June.

***Black Tartarian. H.** Very large, purplish-black, tender, juicy cherry of delicious quality. Tree very vigorous grower and heavy bearer. Most profitable cherry in California.

Centennial. H. A seedling of Napoleon Bigarreau, larger than its parent and beautifully marbled and splashed with crimson on a yellow ground; flesh firm, sweet; a good shipper on account of its remarkable keeping qualities. Early June.

Chapman. H. A seedling of Black Tartarian and in many respects similar; earlier; follows Early Purple Guigne; large and very fine and worthy of more general planting. April and May.

Early Purple Guigne. H. One of best. Purple; tender, juicy, sweet. April and May.

Early Richmond. D. Medium; dark red; juicy; very productive. Middle of May.

English Morello. D. Large; deep red; tree small and slender. July.

Governor Wood. H. Deep yellow, shaded red. Fine for canning and table use. Early June.

***Lambert. H.** Its large size, rich, glossy, deep red color, firm flesh, unsurpassed flavor, combine to make it one of the leading market varieties. Middle of June.

Lewelling. H. (Black Republican; Black Oregon.) Large size, having the size and color of the Black Tartarian and the firmness of Royal Ann. Very profuse bearer; late. Splendid, profitable shipping variety. July.

May Duke. D. Large; rich dark red. May.

***Napoleon Bigarreau. H. (Royal Ann).** A magnificent cherry of largest size; pale yellow with bright red cheek; flesh firm, sweet; most popular all-round cherry. Late June.

New Cherries

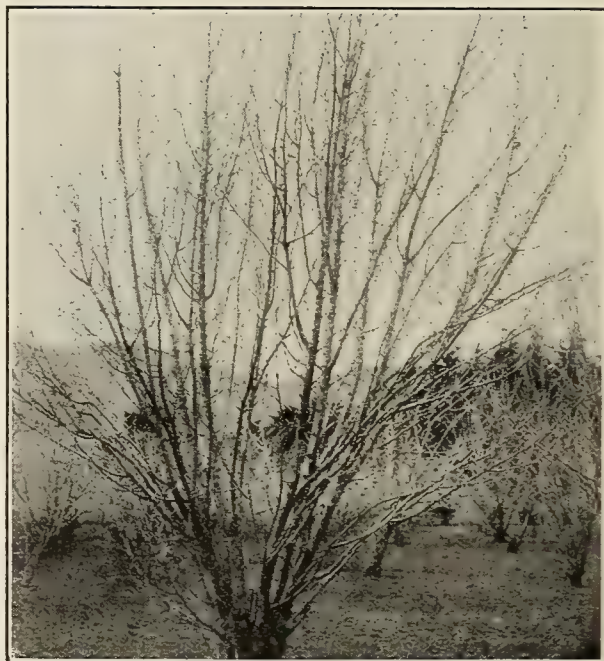
On Mazzard roots:	EACH	10	100
1 year 3 to 4 ft.	\$0 40	\$3 50	\$30 00
1 year 4 to 6 ft.	50	4 00	35 00

***Abundance. H.** Tree a strong grower and an early bearer of very heavy crops. Fully twice as productive as Royal Ann, fruit larger, handsomer, as firm, better form and color, sweeter and far more delicious, never cracks. When canned, in appearance and color the very best. Late May.

***Burbank. H.** This cherry has been tested by practical cherry growers and its commercial value has been fully established. Ripens earlier than the Early Purple Guigne, and its size, firmness and flavor far surpass that variety. Averages medium to large in size; skin deep purplish black; tree a beautiful grower, vigorous and erect. Early May.



Fine Specimen Cherry Tree, Which has been Built up and has a Great Bearing Surface as Result of Pruning Every Year



Then Look at This—A Tree That Has Never Been Pruned, Frame Branches Shooting Straight Upward and Crowded in Such a Manner that the Tree Could Never Bear as it Should



Packing Cherry Crop, Oakdene Ranch Near Newcastle, Owned by S. C. Day—One of Many Profitable Cherry Orchards in California.

THE PLUM

The plum in its geographical distribution on this coast, particularly in California, covers a wide range of soils and climates, being both thrifty along the Coast regions and the interior valleys and well up into the foothills. Indeed, so wide is its range that it is safe to say that every county in the State boasts of its plum orchards excepting, perhaps, the city and county of San Francisco.

This adaptability is undoubtedly due largely to the various stocks on which the different sorts are budded or grafted and also to the fact that plums are either shipped green or canned, very rarely dried. There has been a tendency on the part of many growers to plant plum trees too close together. The Japanese types are of a less spreading habit than the European, but even the former should not be planted closer than 24 feet apart. Where the conditions are favorable for a strong vigorous growth, it is a mistake to plant even this close.

STOCKS

The Peach and Myrobalan root are the standard stocks for the plum and these two roots seem to meet practically all the conditions where the plums are raised. The peach root being given the preference on the sandy, loamy soils, and the Myrobalan on the heavier and damper soils. It is quite possible within a few years that other roots such as the Mussel, so extensively used in Great Britain and on the continent of Europe in preference to any other root for so many of the stone fruits, will find conditions equally as congenial with us. The only way to raise this stock is by layering, making it rather expensive. Several varieties of plums including the following lack affinity for the peach root: Yellow Egg, Jefferson and Washington. On very gravelly soils the almond root could be used to advantage, nearly all varieties doing well on this root. It has not been used to any extent, however.

PRUNING

To deliberately say that a plum tree should be pruned regularly every year would be just as nonsensical as a recommendation never to prune the plum. No absolutely fixed rule can be adopted when it comes to pruning, whether it be a plum or anything else, for in the final analysis the grower must study his conditions and decide for himself the policy to pursue.

There can not possibly be any argument, however, in shaping the trees when they are young and to neglect to train the branches which will eventually be the main supports of the tree, would be just as sensible as being indifferent as to the permanency of the foundation of a substantial dwelling. I have no patience with the man who will not cut his trees back to at least 20 inches after they are planted and who will not endeavor to have the framework branches properly distributed around the body of the tree and who will not shorten them in for at least four years and then develop a well-balanced sturdy tree. If, in after years, larger crops are produced by allowing the trees to grow at their own sweet will, except to cut out interfering branches, this is a matter of judgment.

The planting and the bringing of an orchard into bearing is no small undertaking. It not only taxes the average man's purse strings to the limit but in addition it means the employment of every resource at his command in labor and brains to reach the goal for which he is aiming. Therefore he must have returns for the combination of forces which have caused him to build vigorous, substantial trees.

If I was growing the orchard my decision would be to prune the trees regularly every year even after they reach the four-year age limit.

It is not possible to say definitely how much of the annual growth should be removed, but that the trees should be pruned

to promote fruit spurs, according to my idea it is the only practicable and sensible plan in the handling of a plum tree. As I see it, a tree with fruit from the very crotches to the top ends and evenly distributed throughout, is by far more preferable than to have a total absence of lateral and to have all the fruit spurs on the upper limbs. Where the trees are not cut

Two-Year-Old Plum Tree Showing Framework Branches Shortened In. Cuts Made First Year are Indicated by the Greater Diameter of the Branches.



A Three-Year-Old Plum Tree Already Giving Evidence of the Much Desired Goblet Form.



Six-Year-Old Plum Orchard, Representing a Fine Type of Pruning.



A Row of Plum Trees in Our Packing Yard. Such Trees with Strong Thrifty Roots have Formed the Foundation for Hundreds of Profitable Orchards.

back this is just what happens. After a number of years, depending on the vigor of the tree, practically no new wood is being made, the tree is apparently lacking in vitality, the blossoms are weak, and there is a general debility in the tree. There is only one recourse then. Cut the tree back and build a new top and be out of a crop for at least three years until the tree is again back where it belongs.

Plums—Prices and Varieties

On Peach and Myrobalan roots:

	EACH	10	100	1000
1 year.....2 to 3 ft.	\$0 30	\$2 50	\$18 00	\$140 00
1 year.....3 to 4 ft.	35	3 00	25 00	200 00
1 year.....4 to 6 ft.	40	3 50	30 00	250 00
1 year.....6 to 8 ft.	50	4 00	35 00	300 00

Anita. A new introduction of the Domestic group. Strong grower and very prolific. Fruit sweet; freestone, and yellow-fleshed. A good shipping plum and can be dried whole or pitted. Last July.

"The Anita will become known all over the horticultural world."—M. Sharp, Vacaville, Cal.

Apex Plumcot. This new fruit ripens with the earliest plums. Tree a strong, compact, upright grower and good bearer even where apricots cannot be grown, and in seasons when some plums are failures. Fruit very large; color deep pink or light crimson, freestone; flesh honey-yellow, firm, rich, aromatic. A valuable market variety. June.

Bavay's Green Gage (Reine Claude de Bavay). Large; greenish yellow; juicy. August.

Beauty. Another late introduction, having been accorded a leading place by the growers of shipping plums. Tree a most remarkably vigorous, upright grower, with large, healthy foliage. Fruit beautiful, oval, crimson with amber-crimson flesh. The largest of the early plums and ripening ten days earlier than Santa Rosa. June.

Burbank. Medium; globular; cherry-red, with lilac bloom; flesh yellow. Late June.

Cherry. See **Paragon**.

Climax. Very large; deep, dark red; flesh yellow, delicious flavor. Tree vigorous and very productive. Middle of June.

Clyman. Reddish purple; firm and sweet. Valuable for shipping; very prolific. June.

***Diamond.** Tree wonderful grower, heavy and regular producer. Fruit very large, oblong; dark purple with deep bloom. A splendid shipper. Middle of July to early August.

***Formosa.** A grand shipping fruit. Tree is a vigorous, upright grower with large, cherry-like foliage; fruit of the largest size, heart-shaped and of light cherry-red color. Flesh pale yellow, usually firm, sweet, rich, delicious, with delightful flavor. Ripens July.

***Gaviota.** Ripens two weeks after Formosa; is of a deep reddish purple color; flesh honey-yellow; fragrant and sweet to the pit, which is so small in comparison with size of fruit that it might almost be called "seedless." July.

***Giant.** Tree handsome, vigorous grower. Fruit large; flesh yellow; flavor good; freestone. Fine market variety. Late August.

***Grand Duke.** Tree regular and prolific bearer. Dark purple; flesh greenish yellow. Juicy, firm, sweet, with rich flavor. Large, measuring $2\frac{3}{4}$ by $1\frac{1}{4}$ inches, prune shaped. A most profitable shipping variety; commanding good prices in the Eastern markets. Middle August.

***Jefferson.** Large; greenish yellow; one of the best for canning. July to September.

***Kelsey Japan.** Rich yellow overspread with red; flesh yellow. Its large size and extended period over which it ripens make it invaluable as a shipping plum. Firm. July to September.

Paragon. Fruit round, firm, sub-acid, color deep rich red, turning to purplish-black when fully ripe. Makes delicious jelly. Similar to the well-known Cherry Plum but a marked improvement in size and quality. Tree very hardy, strong grower and heavy bearer. August.

President (New). An English plum of very recent introduction. Fruit uniform, large and shaped like Yellow Egg. Skin purple; flesh yellow and of fine texture. In the Vacaville district it is recognized as the most promising of market plums. Sept.

Rutland Plumcot. As its name indicates, this new fruit is a cross between a Plum and an Apricot. The tree grows very much like a weeping willow; its long, pendulous branches bend gracefully over. Fruit large, with a deep purple, velvety skin and with a brilliant red flesh with sub-acid flavor, making it very desirable for cooking, jellies and jams. June.

***Santa Rosa.** Regarded as one of the best of the Japanese type of plums. Very large; deep purplish crimson color, with pale blue bloom. Flesh yellow, streaked and shaded with crimson. As a shipping plum it has few equals. Ripens middle of June.

***Satsuma (Blood Plum).** Large; dark red from skin to pit; firm; ships and keeps well; juicy. Early July.

***Shropshire Damson.** Oval; dark blue; very firm; flesh greenish, juicy and sprightly. Late September.

***Simon Plum (Apricot Plum).** Prunus Simoni. Large, cinnamon-red; flesh yellow, with pineapple and banana flavor. Early July.

***Washington.** Large; yellow, with crimson blush; flesh yellow, firm, sweet. Fine for canning. Early August.

***Wickson.** Tree strong, upright grower and heavy bearer. Heart-shaped; flesh amber; juicy. Early August.

***Yellow Egg.** Showy market variety and good for canning. Large; oval; deep golden; juicy; rather acid. July and August.



Plums Bear Wonderful Crops and the Fruit Sells at Good Prices.



French Prune. French Prune Improved. Hungarian Prune. Silver Prune.

THE PRUNE

Prunes and plums are so closely allied that remarks pertaining to one fruit are equally applicable to the other. Practically speaking the prune is characterized by its sweet firm flesh and has the property of drying and curing without the seed being removed.

The varieties of prunes having their origin in France seem to find conditions more congenial in the counties clustering around San Francisco Bay than in any other part of the State. There are certain favored spots more particularly in the silty soils of the river bottom in the Sacramento and San Joaquin valleys, where the prunes not only are very thrifty but are very dependable in their production of crops. From a standpoint of quality the dried product from the interior is inferior in quality to the prune from the coast counties. One of the strange anomalies in connection with the growing of the French type of prunes is that in the coast counties even with their much lower average of temperature units in the summer months, the harvesting season commences at least two weeks earlier than in the interior, while the apricot in the same section is six weeks later in maturing than the apricots in the interior valley counties. Trees should be planted from 24 to 30 feet apart.

STOCKS

It is very difficult for nurserymen outside of California to grasp the situation concerning the demand which exists for trees in a variety of roots. The answer is that in California the growing of fruit is just as much a great commercial business and is just as much a staple as the growing of cotton and sugar in the Southern States.

The stability of the tree and its fruitfulness must be guarded by the selection of a root best adapted to the particular soil in which the grower contemplates planting, therefore the extreme

care in securing the right root. The Myrobolan root is preferred by most growers although there are many soils on which this root is used where the peach could be used to advantage. In behalf of the peach root it may be said that the trees are stronger growers than on Myrobolan although not quite so long lived. There is another point which must not be lost sight of and that is that there is a lack of affinity of some varieties of prunes for the peach root, among them may be mentioned Robe de Sargent, Imperial Epineuse, and Sugar.

The Robe de Sargent lacks affinity for the almond root while the other two take well on this root and make good unions.

PRUNING.

Instructions about pruning given for the plum will serve equally as well for the prune.

THE INDUSTRY

Practically sixty per cent of our output of prunes is exported to Europe and the demand is increasing. The very fact that the prune is not the despised article it used to be in the United States is a sufficient indication that the future of the prune is assured. In 1897 the output from California was 97,780,000 pounds, and in 1916, 175,000,000 pounds.

In Oregon and Washington the drying of prunes has developed into quite a business. The French prunes do not bear well, however, and the Fellenberg, called the "Italian" in the northwest, is the only prune used for drying.



Standard Prune—Shows Bearing Habit. Excellent Shipping and Drying Prune. See Page 16.

Prunes—Prices and Varieties

On Peach, Almond and Myrobolan roots:

		EACH	10	100	1000
1 year.....	2 to 3 ft.	\$0 40	\$3 00	\$25 00	\$200 00
1 year.....	3 to 4 ft.	50	4 00	35 00	300 00
1 year.....	4 to 6 ft.	60	5 00	40 00	350 00
1 year.....	6 to 8 ft.	70	6 00	50 00	400 00

Except Improved French. See special prices.

***Conquest.** The tree is a vigorous, healthy, rapid grower and unusually productive. The fruit is very similar to the French Prune in form, size and color, with golden, sweet, rich flesh. The stone has been eliminated with the exception of a tiny speck. The fruit promises to be valuable and the tree is very productive. Ripens with the French Prune. August.

***French (Petite Prune d'Agen).** Medium size; purple; sweet and rich; standard for drying—the most extensively planted prune. August.

Fellenberg (Italian Prune). Large; dark purple; flesh greenish yellow; freestone. August.

German (Quetsche). Long; purple blue bloom; flesh green, sweet; freestone. August.

***Hungarian.** Tree is a vigorous grower, and heavy bearer. Very large; reddish violet; juicy, sweet; profitable for shipment. August.

***Imperial Epineuse (Imperial).** Very large; violet-purple; exceedingly sweet. Very valuable for drying and a great market variety on account of its size and quality. September.

***Robe de Sargent.** Large; deep purple; flesh rich and sugary. Fine prune for drying; ten days earlier than French prune. August and September.

Silver Prune. Largest size; pale yellow; profitable for bleaching and canning. September.

***Sugar.** Dark purple; flesh yellow, tender and rich; valuable for shipping green and for drying; a great bearer. Early August.

***Tragedy.** Dark purple; flesh yellowish green, very rich and sweet. Valuable shipper. Early July.

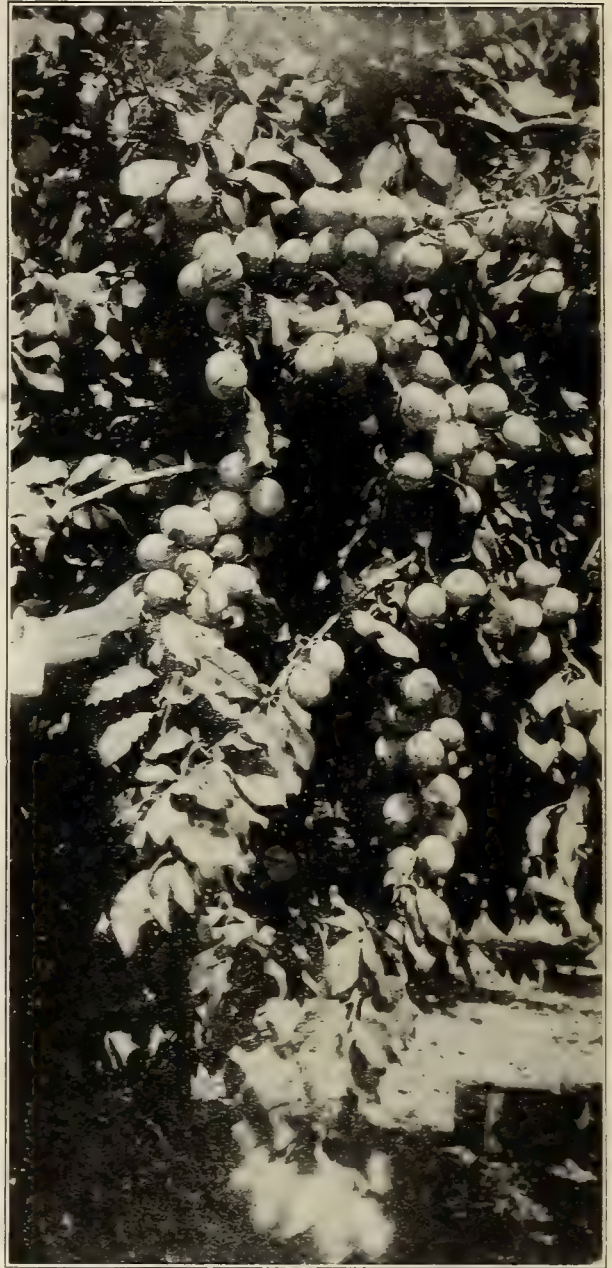
***Standard.** This late introduction is a cross between Tragedy and Sugar Prune. It has been tried in a commercial way now for several years, and is gaining in favor. A valuable shipping prune; brought \$1.90 to \$2.00 per 4-basket crate in 1917. It is also a good drying prune, should be fully ripe and run through pricking machine; brings top price as a dried prune.

The trees are heavy bearers, and although vigorous growers are of dwarfish habit. Well-grown fruits measure four and a half inches around one way by nearly six inches the long way. Skin dark reddish purple, with a heavy blue bloom; flesh honey-yellow, fine-grained, juicy, yet firmer than most other drying prunes. Is very sweet and a perfect freestone. August.

FRENCH PRUNE (IMPROVED) On Myrobolan and Peach roots.

This improved type of French Prune was discovered by us at Suisun, Solano County. Years of observation have demonstrated that this new variety is identical in every particular with the French Prune with the exception that the prunes average 30s to 40s from year to year. The marked distinction in the tree is its weeping habit. It produces without fail every year heavy crops of fruits. This demonstration of selection must appeal to every fruit grower.

		EACH	10	100
1 year.....	2 to 3 ft.	\$0 50	\$4 00	\$30 00
1 year.....	3 to 4 ft.	60	5 00	40 00
1 year.....	4 to 6 ft.	70	6 00	50 00
1 year.....	6 to 8 ft.	80	7 00	60 00



Sugar Prunes in Orchard Belonging to Mr. Robt. Wood, Fresno County. This is a very Profitable Variety in the San Joaquin Valley.



A View in the Davidson French Prune Orchard near Suisun—Trees Six Years Old—Loaded With Fruit of Fine Size—Roeding Trees.

THE APRICOT

The apricot is a native of Asia Minor and the higher regions of Central Asia. As a commercial proposition, California has practically a monopoly in apricot culture as no other section of the Union produces it in quantities at so small an expense and so little risk of failure in crops. In appearance it is perhaps the handsomest of all stone fruits and contains less acid.

For canning, evaporating and drying purposes, as well as for use in the fresh state, the fruit can hardly be excelled. It seems particularly adapted to the Coast counties, where the fruit attains the largest size and the highest flavor. In the interior valleys it has the distinct advantage in that it ripens its fruits fully a month earlier than in the cooler sections of the State. Never plant apricot trees closer than 24 feet. My recommendation is to plant 30 feet.



One-Year-Old Apricot Tree with Frame Branches Shortened to Promote Steadiness.

A Three-Year-Old Apricot Tree With Well Balanced Head and Already Giving Indication by Blossoms of the Possibilities when it Comes into Full Bearing.



STOCKS

Owing to the success with which the apricot can be budded on different stocks, it adapts itself to a wide range in the matter of soil, moisture and climate. Apricot trees are budded on peach, apricot and Myrobalan plum roots. Apricots on almond should never be planted, as there is no affinity between the two stocks and the trees will break off at the bud even when several inches in diameter. The only practical way to have the apricot on almond is by budding a peach on this stock and then rebudding the peach with the apricot. The peach root is well adapted to a light, well drained, warm, sandy soil and it has the natural tendency to develop a sturdy, magnificent, fruitful tree. The Myrobalan root withstands a surplus of moisture, is rather free from sour sap, has a tendency to cause trees to be longer lived, adapts itself to moist and very heavy soils.

PRUNING.

The very fact that the apricot trees are strong, straggly growers obviously makes it necessary to prune the trees carefully for at least the first four years of their existence. The trees should be cut back to twenty inches after they are set. It is safe to cut trees back to this height even if they are extra large and devoid of any lateral branches below where the tree is nipped off, because of the plump, well developed buds on the stem of the tree. Not more than four branches should be left the following year after planting, having them carefully distributed around the stem as it is possible to get them. In the second year these branches should have at least two-thirds of their growth cut off. This severe cutting promotes not only a stocky well balanced tree but insures a vigorous growth and encourages a compactness that cannot be secured in any other way.

In the third year the pruning should be far more moderate otherwise there is a tendency to make the tree bushy to such an extent that many of the laterals starting from the lower work branches just above the point where they diverge from the main body of the tree are smothered out. In the fourth year the pruning should be more a matter of shaping and controlling the branches making a rampant growth. The tree in its fourth year should have a pronounced wide open goblet form and it will unquestionably have, if the pruning has been properly done.

There is no use denying the fact that the apricot is distinctly a creature of environment. It is an open question as whether or not any benefit is derived as far as truthfulness is concerned from summer pruning. A grower must determine this for himself. The results obtained must be his answer. Some varieties after they have reached bearing age if pruned heavily every year will not produce sufficient fruit to pay for cultivation. This has been demonstrated to be a fact in the handling of the Hemskirke, which if pruned heavily, it is a very shy bearer. For size and flavor there are few apricots that will compare with it unless it is the Moorpark. This variety has thoroughly identified itself as being so shy a bearer that commercially it is no longer seriously considered. As stated in the introduction I am solely responsible for any recommendations concerning pruning in this catalogue, at the same time, if I have any egotism it is not so pronounced that I am not willing to give credit to the successful men who practice the very methods which I champion. Furthermore, in my opinion, any suggestion may be of value to the reader to a certain extent, but wherever it is possible for a planter to personally visit a property and absorb from the owner the methods that have been followed, there is nothing to my mind which will be more conducive to success than to follow along the same lines as the man who demonstrates by an actual example that he is on the right track. Possibly the largest acreage in apricot trees is found in Santa Clara County. It is the exception to find an instance where trees are not pruned. There are very few if any properties in the valley in which thorough and intelligent management is more manifest than in the 500 acres under the control of Mr. H. E. Losse. He has 120 acres of 15-year old apricot trees equally divided between Blenheim and Hemskirke and there was every indication at the time of my visit in July, 1917, that he would harvest no less than 900 tons of fruit from the orchard. No finer example of pruning could be found anywhere for the trees were loaded with fruit which was of the largest size and evenly distributed from the framework branches to the extreme top of the tree. The trees are never summer pruned. Up to three years ago the treatment of both varieties was the same, with the result that the Hemskirke variety produced very light crops. Now that the pruning of the Hemskirke has been confined to the removal of interfering branches the yield has been exceedingly satisfactory. It will be necessary after a period of five years to head in these trees very severely to develop new wood in the trees handled in this manner.



A Six-Year-Old Apricot Tree with a Well Developed Head as a Result of Regular and Systematic Pruning.



Typical Blenheim Apricot in 120-Acre Orchard Owned by Mr. H. E. Losse near San Jose. This Orchard Produced 900 Tons of Apricots in 1917. Such Results ; this Tree Exhibits are Only Obtained by Careful Attention to Pruning, Causing an Abundance of Fruit to be Produced Thru-out the Entire Tree.

Apricots—Prices and Varieties

On Apricot, Myrobolan and Peach roots:

	EACH	10	100	1000
1 year.....2 to 3 ft.	\$0 30	\$2 50	\$20 00	\$160 00
1 year.....3 to 4 ft.	35	3 00	25 00	200 00
1 year.....4 to 6 ft.	40	3 50	30 00	250 00

***Blenheim (Shipley)**. Above medium; deep yellow; juicy and rich flesh. Practically the same as Royal. Any difference is in the fact that Blenheim is larger. In great demand both for canning and drying. Trees regular and heavy bearers. Middle of June.

***Hemskirke (Alameda Hemskirke)**. Bears so close a resemblance to Moorpark, hard to distinguish them apart. Equal to it in flavor. Its qualities may be summed up as a Moorpark which bears the largest and finest quality of apri-



WESTERN UNION
TELEGRAM

Branch of Tilton Apricots. Fruit is Large and Bears Heavily. Large Profits are Made from this Variety in the San Joaquin Valley.

cots, not being surpassed in flavor even by the Royal. Flesh bright orange; tender. June.

Large Early Montgamet. Fruit large, compressed; golden yellow. Early June.

Newcastle Early. Medium; fine quality; good shipper; two weeks earlier, and more highly colored than Royal; early, regular and good bearer. Very valuable on account of its earliness. First of June.

Routier's Peach (Peach; Bergetti's French). Yellow; flesh yellow; juicy. June 15.

***Royal**. The most extensively planted variety. Medium; flesh pale orange, with rich, vinous flavor. See Blenheim. Early June.

***Tilton**. Orange-yellow, with pronounced flavor; planted largely in San Joaquin Valley, where it is considered the leading apricot for shipping, canning and drying. Has produced wonderful returns in many districts during past year. June

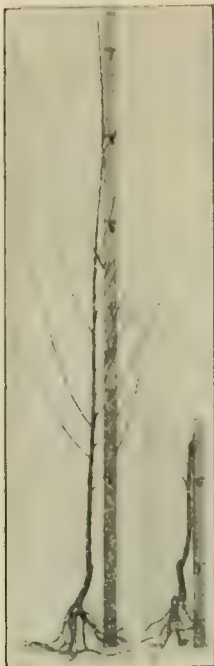


Splitting Apricots on the H. Hoskins Ranch near Parlier. This Work Keeps Everyone in the Neighborhood Busy

THE PEACH

The peach, like the prune and apricot, is indeed a fruit of commercial importance, and finds wide distribution not only in California, but throughout the length and breadth of the Pacific slope. For size, flavor, color and shipping qualities the peaches grown in this State have a national reputation. The tree prefers a light, deep, sandy loam, preferably inclined to be dry rather than too moist, but well drained. It should be not less than three or four feet deep, the more depth the better.

Fresno County is the peach center of California, having a total according to reliable estimates, of not less than 5,000 acres. The Libby McNeil & Libby Cannery, located in Selma, the great peach center of the county, handles no less than 8,000 tons of peaches annually in its plant, and this is only a very small part of the canning peaches raised yearly in Fresno.



A One-Year-Old Nursery Grown Peach Tree and the Same Topped and Root Pruned for Planting.



One-Year-Old Peach Tree Demonstrating New Idea in Pruning.

Commercial importance of peach growing can not be estimated in dollars and cents, for the great territory over which the peach thrives with the practical certainty of a crop one year with another makes the field a very promising one.

The fact that the drying of peaches can be carried on so simply without any loss of fruit for the sun does the work after the peaches have been halved, and (the pits extracted) exposed to the fumes of sulphur for four hours on wooden trays. The drying of peaches is a business in itself, just as much so as the shipping of the fresh fruit and the canning business.

In the last analysis it presents the finality in the industry for all the fruit is cared for and there is no wastage. There has been more or less prejudice to dried peaches due to their fuzzy skin. This has been overcome now by a process for which the Lovell and Muir seem to have a decided advantage, of removing the peel by a recent invention even after the fruit is dried. That the consuming public appreciates this grade of fruit is demonstrated by the high prices which dried peeled peaches sell for in the market.

As a matter of fact the orchardist at a very small additional expense could easily do this himself. All that is necessary after the peaches have been halved, regardless of variety is to immerse the fruit in a hot lye water maintained at a temperature of 200° Fahrenheit for forty seconds. Dissolve one pound of lye in ten gallons of water. The peaches after being given the lye dip are then immersed in a tank of cold water not only to remove every vestige of lye but to cause the skins to slough off. It will pay the owners of large orchards to purchase a lye-dipping machine such as is used in the canneries and known as a "Grasshopper" for this purpose. The machine is not very expensive and would more than pay for itself in a single season.

The general cultural directions for the handling of deciduous fruit trees in the introductory chapters should be closely followed in the case of the peach tree. Nothing will bring a peach tree to a premature end quicker than not to prune. The trees as they stand in nursery rows have the limbs removed to a point about 12 inches from the ground. Instead of removing all these limbs when topping the tree at 20 inches, they should be cut back to about two inches long, so in case the



A Well-Grown Two-Year-Old Peach Tree.

buds on the main body do not start in the spring the buds and smaller branches will. If the buds do start on the main body, the branchlets may be clipped off with a shear.

PRUNING

All growers are practically in one accord that peach trees must be pruned. How to do it, brings up an endless amount of argument. They say, "A confession is good for the soul." I am not going to argue this pro or con, except to say that I am now firmly of the opinion that the ideas that I have had for a number of years relative to the pruning of the peach, while they may not be absolutely wrong, do not bring the trees into bearing as early and as prolifically as it should. There is no argument about heading the trees to twenty inches after setting and resorting to very severe pruning the first year, cutting off at least one-half, or better still two-thirds of the current season's growth. Not more than four branches should be used to make the head of the tree, and they should be distributed to secure as symmetrical a tree as possible. Heretofore my recommendation to prune back severely in the second and third years has resulted in developing an immense amount of woody growth, producing a fine umbrageous head, which was



Same Tree as Above, Pruned. This Tree will Produce a Light Crop of Fruit without Impairing the Vigor of the Tree. The Severe Cutting Heretofore Recommended Promoted an Exuberance of Growth, Many of the Laterals Being Smothered Out with No Way of Bringing Them Back.



Four-Year-Old Peach Tree Before (above) and After (below) Pruning. Note that It Carries Fruit Bearing Laterals From the Point that the Main Branches Diverge from the Body of the Tree to the Very Top.



a sight to behold in the summer months, and which to all appearance, judging from the general healthfulness of the tree, was the right policy to follow. Careful observations have now convinced me that this severe pruning has promoted the woody growth of the tree to such an extent that it has militated against its fruitfulness. Instead of cutting the framework branches back so severely in the second and third years they should not be cut back more than one-third and the laterals distributed along their entire length at intervals of six to eight inches apart, should be shortened in of course, but not cut off. By following this plan a crop of peaches which will pay for cultivation may be harvested the third year, without in any way impairing the vitality of the tree.

In the fourth year and in subsequent seasons the method of pruning will be self-evident to the experienced pruner and requires no further elucidation here. This is the very idea which I hoped to bring about by the old method, but it was invariably frustrated by the exuberance of growth of the tree, the fruitful laterals being smothered out.

THINNING

To obtain large, firm fruit, thinning should be done when the fruit has set well and before the kernel has hardened.

Most growers become frightened when they find the ground under a tree literally covered with fruit and get cold feet. Forget your imaginary troubles and keep at it until your peaches are not closer than four inches apart, and try to have most of them six inches from each other, and then your crop will be heavier, no doubt than your tree will carry, without having a prop to support the overburdened branches. Less pits and more pounds of actual, fine, large, luscious, perfect peachy peaches should be the purpose for which every grower should strive.

Peaches—Prices and Varieties

All Varieties—except Phillips Cling, Tuscan Cling, Muir and New Varieties—on Peach roots:

	EACH	10	100	1000
1 year 2 to 3 ft.	\$0 35	\$3 00	\$25 00	\$200 00
1 year 3 to 4 ft.	40	3 50	30 00	250 00
1 year 4 to 6 ft.	50	4 00	35 00	300 00

Phillips Cling, Tuscan Cling and Muir—on Peach roots:

	EACH	10	100
1 year 2 to 3 ft.	\$0 40	\$3 50	\$30 00
1 year 3 to 4 ft.	50	4 00	35 00
1 year 4 to 6 ft.	60	5 00	40 00

All clingstone varieties are designated by the word "cling" following the name of variety, as for example Blood Cling.

***Admiral Dewey (Triumph.)** Large and handsome; the first early yellow-fleshed variety to ripen; a good market sort. Middle June.

***Alexander.** Large; greenish white, shaded deep maroon; juicy, sweet; a standard shipping sort. Early June.

Bilyeu's Late. Large; white with blush cheek; flesh white; excellent late shipper. October.

Blood Cling. Medium; clouded purplish red; flesh deep red. July.

Briggs Red May. Greenish white, with red cheek; flesh white. Recognized market variety. Middle of June.

Early Crawford. Very large, oblong; skin yellow, with fine red cheek; flesh yellow, very sweet and excellent. Middle of July.

PEACH—Continued Page 21



Same Tree in the Following Summer with the Leaves Stripped Off from One Side. Loaded Down with Heavy Crop of Uniform Size Peaches. This is not Due to the Pruning Entirely but to the Thinning that was Done While the Kernel was Still in the Milk Stage.

PEACH—Continued

***Early Imperial.** Identical with Yellow St. John. Deep yellow, with dark red cheek; flesh juicy and firm. Good for table and shipping. Last of June.

***Elberta.** Very showy and one of the best market and table varieties. Last of July.

***Foster.** Large; yellow, dark red cheek; fine for drying, market or canning. July.

George's Late Cling. Large; yellowish white, splashed with red; flesh firm. Ships well. September.

Greensboro. Among the earliest and largest. Creamy white, with dainty blush; a wonderfully vigorous grower. May 1.

***Hale's Early.** Large; skin greenish, mottled red; flesh white, juicy, sweet. A standard among shipping varieties. Early July.

***Heath Cling.** Very large; creamy white, with faint blush; flesh white; highly flavored and one of the best for canning. September.

Late Crawford. Very large; yellow, with red cheek; flavor excellent; dries well. Early August.

Levis Cling. Strong grower; fruit deep golden yellow, slightly blushed on one side. Flesh clear yellow to pit; fine-grained, excellent flavor. Ripens before Tuscan Cling. Early July.

Levy's Late or Henrietta Cling. Deep yellow, shaded brownish red; of the largest size and one of the best for canning for home use. October.

***Lovell.** Leads all other clear yellow freestones; medium to large. One of the best drying and canning freestones. Dries even heavier than the Muir. First week in August.

***Mayflower.** One of the earliest peaches; red all over. For an early shipping peach probably best of all; brings good price and ships well. A favorite in southeastern states where it ripens about two weeks later than in California. Tree a strong grower, late bloomer and heavy bearer. May.

***McDevitt's Cling.** Large; golden yellow; flesh superior flavor. In demand by canners. August.

***McKevitt's Cling.** Creamy white, with delicate blush; flesh firm, rich and sugary; as a canning peach it has few superiors. Late August.

***Muir.** Very large; flesh clear yellow, very rich and sweet. The leading drying peach of California; good for canning. Last of July.

***Phillip's Cling.** Large; yellow; flesh firm, clear yellow. Always commands the highest market price for canning. Late August.

***Runyon's Orange Cling.** Very large; yellow, with a dark crimson cheek. Early August.

***Salway.** Large; flesh deep yellow; rich and sweet. Good for canning and drying. Middle of September.

Sellers' Orange Cling. Very large; rich golden. Middle of August.

***Sims Cling.** An improved Phillip's Cling. Large to very large; golden yellow, with faint blush; flesh deep yellow, of fine texture, firm and rich; pit small. We regard it as the best clingstone for canning and recommend extensive planting. Ripens middle of August.

Sneed. Large, creamy white, with blush cheek; tender, juicy; valuable for early shipping. Middle of May.

Strawberry. Medium white, marbled dark red; flesh white, juicy, with rich flavor; good table sort. Early July.

***Susquehanna.** Large; yellow, nearly covered with red; flesh yellow, sweet, juicy. August.

***Tuscan Cling (Tuskana; Yellow Tuscan).** Very large; yellow. The best early canning peach; takes the lead over all other peaches in price. Middle of July.

***Wheatland.** Very large; yellow, shaded red; flesh yellow; firm, melting, juicy. August.

Yuba City Cling. A very fine white cling ripening shortly after Phillips Cling; skin is clear white; flesh snow white, no trace of red; firm, good flavor. Pit is small. Fruit is good size and hangs on the tree well. Early September.

New Peaches

		EACH	10	100
1 year.....	3 to 4 ft	\$0 60	\$5 00	\$40 00
1 year.....	4 to 6 ft	70	6 00	50 00

***J. H. Hale.** A valuable new table, shipping and drying peach. Smooth skin, almost fuzzless. Very firm. Ships almost like an apple. Yellow freestone; flesh tender, excellent quality. Larger than the Elberta and ripening about the same period. From a California standpoint not in the class of canning peaches because it is red at pit and rags in the syrup. Middle of July.

***Libbee Cling.** This is another new peach which originated in Selma, and which commences to ripen its fruit shortly after the Tuscan. The skin is highly colored and the flesh of a deep yellow tinge. The fruit is very large. The tree is of an exceptionally robust habit and a very heavy producer. This variety has been planted in a small way for several years and it has been tested sufficiently so that its value as a canning peach with a great future ahead of it cannot be questioned. The Selma and the Libbee are two varieties which will undoubtedly stand out prominently as leaders among the canning peaches. Last of July.

Oklahoma Beauty. Extremely large; nearly round, with high color. Among the finest in quality. Specimens measure 8 inches in circumference. May.

Oklahoma Queen. "Queen of Peaches." Larger than Greensboro in size, and in quality one of the finest early peaches grown. Wonderfully productive. Middle of May.

Peak's Cling. A good canning sort. Selma Cling far superior and should be planted instead of Peak's as it is the best of the midsummer clings, following Tuscan.



The J. H. Hale Peach Fruiting in Fresno. Larger than the Elberta—a Firm, Splendid Shipping Variety.

SELMA CLING PEACH

(Reproduced in color on front cover)

THE NEW MID-SEASON CANNING PEACH

Follows immediately after Tuscan, thus filling a long felt want of the canneries

In the past few years many new peaches have been introduced. Some of these have had merit, others have not. In an address before the California Association of Nurserymen at San Francisco, the great horticulturist of California, Professor E. J. Wickson, stated "We need two good Clingstones to ripen between Tuscan and Phillips and as good as they are." All who are interested in canning peaches will agree with Prof. Wickson. We are introducing to the horticultural interests of California a new yellow cling peach that will fill the gap Prof. Wickson mentioned. The Selma Cling is named after the City of Selma, which is located in the heart of the greatest peach district in the world, where the great Libby McNeil & Libby canneries use thousands of tons every year.

HISTORY.—About 40 years ago a small lot of peach trees were planted on the Levis ranch a few miles east of Selma. These trees were budded to the leading varieties of that time. As usual some of the buds did not grow, but as peach trees were scarce and there was a brisk demand for peaches to supply the towns along the S. P. R. R. many of these seedlings which were in the nursery rows were planted. As is always the case many of the seedlings proved worthless, but one at least bore a very fine yellow Clingstone peach and from this tree buds were taken and some trees in the nursery were budded of this particular new variety. It seems that the variety was not named but the trees were sold and found thereafter in the orchards of Tuscan, Phillips, etc., and in this way were distributed over the adjacent country. This resulted in this new variety being found among other varieties and as the peach proved to be a very fine canning variety, other trees were propagated and usually named after the man owning the ranch where the tree was bearing. We have watched the performance of this variety in a number of orchards for several years, have annually tested the fruit from a number of the trees, making tests as to time of picking, condition of fruit at various picking dates, and in addition have made a number of canning experiments.

The fruit from a number of scattered trees showed very little difference, but from a few selected trees showing remarkable bearing records of perfect well shaped fruit we took our buds.

About peaches of this class Mr. W. G. Nash, manager of Libby McNeil & Libby says, "The Orange Cling is running out and a new yellow cling ripening after Tuscan as good as the Tuscan, is greatly needed and we will contract for a number of acres of such peaches."

DESCRIPTION.—The peach is a beautiful golden yellow, very uniform in size, desirable for canning, and during the past season when so many of the canning peaches were small, the SELMA CLING averaged a good canning size. Somewhat flattened; skin slightly colored when exposed to sun; flesh a clear yellow to the pit; is fine grained and of excellent flavor; the pit is very small, a point which appeals very forcibly to those who are engaged in the canning of fruit. The syrup is left clear, there being no rag of the flesh at all in canning.



Examining a Selma Cling Peach Tree. Fruit of Uniform Size and Well Distributed on the Branches.

PRICES

	EACH	10	100
2 to 3 feet.....	\$0 50	\$4 00	\$35 00
3 to 4 feet.....	60	5 00	40 00
4 to 6 feet.....	70	6 00	50 00

THE QUINCE

A standard fruit which has held its own without material modification for upwards of a hundred years. It likes a deep and loamy, moist soil. Its distribution is quite general, doing well along the Coast and in the interior, where there is sufficient moisture, or irrigation is practicable. Though not of equal importance with the peach and apple, nevertheless a few trees should find a place in every family orchard.

On account of its wide adaptability in California, quinces are deserving of much more attention than they have been receiving. The trees are tremendous bearers. For jelly-making they are superior, according to our views to any other fruit. Such varieties as Pineapple and Smyrna make a most palatable dish when cooked. There is a growing demand for them in the East, and although it is a matter not generally known, carload shipments of quinces are not at all uncommon.

On Quince roots:		EACH	10	100
1 year.....	2 to 3 ft.	\$0 30	\$2 50	\$15 00
1 year.....	3 to 4 ft.	40	3 00	25 00
1 year.....	4 to 6 ft.	50	4 00	30 00

Apple or Orange. Large; fine golden color; valuable for preserves or flavoring. September.

Champion. Large, bright yellow, ripening two weeks later than Orange. September.

***Pineapple.** Flavor is suggestive of the pineapple. Makes a superior jelly and will cook tender in five minutes. September.

***Rea's Mammoth.** Large, bright yellow; a strong grower, and very productive. October.

***Smyrna.** Introduced by us from Smyrna. Very large and of a lively lemon-yellow; when cooked it is very tender, with a pronounced Quince taste and odor. October.

THE NECTARINE

There is a mistaken idea that the nectarine is a cross between the peach and something else, while it is really neither more nor less than a smooth-skinned peach. There is no question whatsoever about the nectarine adapting itself as fully to California conditions equally as well as the peach. The trees bear fully as well as the peach and for canning, drying and shipping, it has so many points in its favor it is difficult indeed to comprehend why planters have not engaged in nectarine culture in greater numbers than they have. In England the nectarine can only be grown under glass and the price realized for this, the most highly prized of all stone fruits, is beyond belief. As the nectarine has identically the same habit as the peach, the cultural directions are the same; therefore, any additional instructions given would be superfluous.

On Peach roots:	EACH	10	100
1 year.....2 to 3 ft.	\$0 30	\$2 50	\$18 00
1 year.....3 to 4 ft.	40	3 00	25 00
1 year.....4 to 6 ft.	50	4 00	30 00

Except Gower.

***Advance.** Large; green, blotched with red; flesh greenish white. Early July.

Boston. Large, oval; bright yellow, with deep red cheek; flesh yellow, with a pleasant sub-acid flavor; tree a fair bearer. Late July.

Hardwick. Very large, pale green with red cheek. Highly flavored; freestone. A splendid bearer. August.

Humboldt. Very large; bright orange-yellow, streaked crimson; flesh orange. Tender, juicy, highly flavored. One of the best. August.

New White. Large; greenish-white, with slight tinge of red; flesh juicy, with rich flavor. Early July.

***Stanwick.** Very large; skin pale, shaded rich violet; flesh white, tender, juicy. The best drying, shipping and canning sort. August.

***Victoria.** Tree a strong grower and heavy bearer. Medium, roundish, oval, greenish yellow, crimson on sunny side. Rich in sugar. August.

GOWER NECTARINE

Earliest of all Nectarines. Ripens with Early Crawford Peach.

Perhaps no fruit of its class has met with such favor as has this new early red Nectarine. The demand for Nectarines is rapidly increasing. The fruit for shipping and drying is bringing good prices. As a result more Nectarine Trees are being planted this year than for many seasons. We consider that we are very fortunate in being able to introduce this valuable new sort at this time after closely observing it for some time.

We strongly recommend the Gower for home and commercial planting.

Fruit is a very firm freestone. Ships like a clingstone peach. Very early; delicious flavor. Free, strong grower, bears heavy. We believe the Gower will soon be recognized as a leading early Nectarine.

"I consider the Gower the best early Nectarine. Fresh fruit sells easily at 3½c per pound." E. Gower, Fowler, California.

GOWER—Price:

	EACH	10	100
1 year.....2 to 3 ft.	\$0 50	\$4 00	\$35 00
1 year.....3 to 4 ft.	60	5 00	40 00
1 year.....4 to 6 ft.	75	6 00	50 00



Mr. Edwin Gower Picking Gower Nectarines.



Gower—New Early Money-maker Nectarine.

The Nut Trees

The irresistible desire of people in every walk of life to join the brigade and grow something in the fruit line is quite the thing as far as nut culture is concerned in California. Today the walnut and the almond predominate, but who will deny that the Chestnut, Filbert and Pecan will not all be factors to be reckoned with before many years go by? We know positively from observation in Europe that all of these nuts have a future before them, and the progressive nurseryman who is farsighted enough to realize all this is cataloging all these nuts, introducing the leading varieties from Europe and educating our people to the possibilities of their culture.

Twenty-five years ago California produced 150 tons of almonds, the average annual output now is 3000 tons; in walnuts, 400 tons, as compared with 12,000 tons now. Our imports of almonds are close to 9000 tons, and 18,000 tons of walnuts. These figures appear to be all out of reason, but they are quite true just the same. Figures don't lie, and the people of these United States want more of our nuts and will buy them in preference to the imported article, as our production meets the requirements of quality. The old story that this or that fruit will not do in California has been worn threadbare, and although we cannot grow everything where climatic and soil conditions are against us, every variety of fruit grown in Europe and Northern Asia will adapt itself to California conditions. We must not be overburdened with the thought to let well enough alone, but must be striving to improve the varieties of nuts already grown and aim to increase our scope of operations until we stand supreme as the nut center of the world.

THE ALMOND

Almond trees are budded on almond and peach roots. Never on apricot root. The almond root should be planted on sandy, gravelly soils where there is an absence of moisture during the late summer months. The peach root should always be given the preference on loamy, compact soils, which are retentive of moisture.

There are many sections in the great interior valleys and in many of the coast counties, noticeably San Luis Obispo, 30 miles inland, where almonds are an assured success. Thousands of acres have been planted in recent years. The very fact that the rainfall is ample, combined with the necessary elevation, overcoming the danger of injury to either the blossoms or nuts when in their formation stage, has had much to do with the extensive acreage planted to almonds. A well-drained warm soil and a locality where there is not too frequent an occurrence of frost in the spring are the necessary requisites to make almond culture a success.

STOCKS

The Almond and Peach roots are used exclusively for the growing of almonds. There is a preference for the almond root, because it sends its roots down deeper into the ground and the consensus of opinion is that trees are not only stronger growers but live longer on the almond than on the peach. The almond is really a very long lived tree and whether on peach or almond, providing the soil conditions were right, I have never observed any great difference in the longevity of the trees on either root.

CLASSIFICATION

The sweet almonds are divided into the following grades: The hard shell variety has no commercial value except for raising stocks for budding and grafting other varieties. These have 6 ounces or less of kernel to the pound of nuts. There is one exception, viz., the famous "Jordan," which is a hard shell with its fixed type of elongated kernel and a flavor superior

to all other almonds. Cross pollination is one of the interesting phases in connection with almond culture, and although no exhaustive experiments have been made to determine how far reaching this is, alternating three to six rows of a variety has a very marked effect in improving the yield.

All of our almonds are one year buds. Long years of experience has demonstrated that the yearling tree grown under our favorable conditions is fully equal to two and three year old trees grown elsewhere.

PRUNING

When planting almond trees the instructions relative to other trees as given in the introduction should be followed. The trees after being set should be headed to 20 inches from the ground. During the first year allow the numerous shoots to grow without any interference and in the early winter months thin out the laterals so that the lowest ones will not be closer than ten inches from the ground, not leaving more than four to form the head of the tree. Even if they have made a growth of from three to four feet, cut them back severely. Because almonds should not be pruned much in later years, do not hesitate to prune when they require your trained eye and hand to shape them properly, and create a form and a head which can only be secured by severe cutting. **If there is any one object I have in view, it is to impress the man who aspires to be a fruit grower to remember that his success for at least the first eight years of his undertaking is dependent absolutely on a few essentials, and the pruning of his**



Three-Year-Old Almond Tree Illustrating Method of Pruning. The Wide Open Top Could Not be Secured by Any Other Plan than the One Followed in this Instance.



Almond Orchard in Tulare County, Cal. Almonds Thrive in Many Localities.

trees is one of the most important for at least the first four years of their existence.

The second and third winters cut off at least from one-third to one-half of their growth. The fourth winter, the tree now having become sturdy and assumed the goblet form which is ideal, confine your pruning to the thinning out of objectionable branches, and remove laterals where there is a tendency to overcrowding, to permit light and air to circulate through the trees.

Almonds—Prices and Varieties

On Almond and Peach roots:	EACH	10	100	10 0
1 year.....	2 to 3 ft.	\$0 30	\$2 50	\$20 00
1 year.....	3 to 4 ft.	35	3 00	25 00
1 year.....	4 to 6 ft.	40	3 50	30 00

***Drake's Seedling.** Regular and abundant bearer, due to its late flowering. Soft shell.

***Eureka (New).** Blooms with Nonpareil, usually in full bloom March 1. Nuts mature September 1. The Eureka on account of the similarity of the kernel in shape and flavor to the famous Jordan, commands the very highest price, and confectioners pay a premium to secure it. It differs in two essentials from the Jordan, being somewhat smaller in size and is a paper-shell. The tree is an exceptionally strong grower and heavy cropper. Originated on the farm of A. M. Newland, Colusa, Cal. His orchard is over twenty years old and a failure of crop has never been known. The commercial value of this nut has been established by years of trial.

***I. X. L.** Sturdy, upright grower; nut large; soft shell; bears heavily and regularly. Usually single kernels, but perfect, hulls easily, no machine needed; bleaching unnecessary in many districts. Highly recommended by all orchardists.

Jordan. The famous Spanish variety so long sought after by nut-growers. Nuts are long, with hard shells; the kernels are superior in flavor, long and plump and filling the entire cavity. A strong grower and heavy bearer.

***No Plus Ultra.** Large and very long; soft shell, producing clusters all over limbs. Almost always single kernel; fine flavor, hulls readily. A rapid grower and regular, heavy bearer.

***Nonpareil.** Weeping habit and forms a beautiful tree. One of the best. An extraordinarily heavy bearer of the paper-shell type.

***Peerless.** Preferred by some to I. X. L., which it resembles, but the nut is larger. Shell medium soft, white. Kernel short, few doubles. Grown quite largely in Sacramento Valley where it is considered a very profitable nut.

***Texas Prolific.** Closely resembles Drake's Seedling. Kernel very plump and of medium size, well filled, shell soft, hulls very easily. Never fails to produce a good crop. Valuable to plant with other varieties for pollination. Most vigorous grower of all Almonds. As a regular and sure cropper has no equal.

THE CHESTNUT

Chestnuts thrive fully as well on a heavy, clayey soil as they do on a sandy loam, providing it is retentive of moisture and is deep enough to allow the roots to penetrate without hindrance. In the interior valleys they should be planted in river bottoms, or they may be planted on the plains, providing the soil conditions are satisfactory, either sub-irrigated or the moisture being supplied by surface irrigation. As a rule all failures to successfully grow them in the interior can be traced to the sunburn of the exposed high pruned body of the tree. Low

heading is therefore one of the important points in connection with their successful culture in the interior. As the trees do not bloom until all likelihood of frost has passed there is no danger of injury from this source, and bounteous crops are harvested from them annually. Preference should always be given to the grafted trees by the orchardist; such trees will commence to bear within three years after planting. The nuts are of a uniform size and quality and the increased cost of the grafted trees over the seedling will be more than repaid with the first year's crop. Beyond its economic value for its nuts, the tree possesses advantages for avenue planting, and makes a very striking ornamental tree with its dark, glossy green leaves, when planted singly. Where solitary trees fail to bear, it usually arises from the fact that the staminate and pistillate blossoms do not mature at the same time. Trees should be planted from 40 to 50 feet apart. After the head of the chestnut tree has once been formed, only a little pruning, except to remove interfering branches, will be necessary.

The grafted varieties come into bearing when four years old and produce nuts of superior quality. The trees have more distinctive character. For fruit and ornamental purposes they have few equals.

Grafted Varieties	EACH	10
3 to 4 ft.....	\$0 60	\$5 00
4 to 6 ft.....	80	6 00
6 to 8 ft.....	1 00	8 00

Japanese Mammoth. A small tree of compact symmetrical habit, with handsome foliage. Begins to bear much earlier than any other variety. Nut very large, the individual nuts being over an inch wide.

Numbo. Nuts large, handsome, and as finely flavored as any large Chestnut.

Paragon. Tree hardy, very productive; nut large.

Chestnut Seedlings

	EACH	10	100
3 to 4 ft.....	\$0 40	\$3 00	\$25 00
4 to 6 ft.....	50	4 00	30 00
6 to 8 ft.....	60	5 00	40 00

American Sweet. The well-known native tree of the Eastern States; nuts small but sweet; very desirable in coast counties.

Italian or Spanish. Introduced from Europe. Very ornamental; medium-sized nuts.

THE PISTACHIO

Promises to assume commercial importance. This is the Pistachio Nut of Commerce, sometimes called green almond. Very extensively used for coloring and flavoring confectionery and Ice Cream.

The tree is dioecious, that is the male and female flowers are on different trees and must be planted together. Order one male tree with each female tree.

Male and Female Trees	EACH	10
3 to 4 ft.....	\$2 00	\$15 00
4 to 6 ft.....	2 50	20 00

Pistachio Seedlings

	EACH	10
3 to 4 ft.....	\$1 00	\$ 7 50
4 to 6 ft.....	1 25	10 00

Not guaranteed to fruit but a splendid avenue or lawn tree.



Large Chestnut Tree Growing near Concord, Contra Costa County. A Beautiful Ornamental Tree Bearing Nuts of Finest Quality.

THE PECAN

Of the eight or nine species of hickories the one which produces the most marketable fruit and in the most profitable quantities is the Pecan. A native of the Southern States, it is today the only nut grown there and to a limited extent in the Middle States, which has any commercial importance. Texas is probably the largest producer of pecans, the crop aggregating several millions of pounds and gathered largely from seedling trees. The business of cracking pecans and selling the meats put up in attractive packages has created a demand for the nuts which is increasing at a very rapid rate. It is largely due to the impetus the industry has received in recent years that has encouraged the planting of trees on a commercial scale of the improved papershell types. The difficulty of extracting the meat from the hard shell seedling nuts has been one of the causes for their not being more popular as a dessert fruit. The thin shells of the improved types, the ease with which the meats are removed, and the noticeable absence of the fibrous segments found in the hard shell nuts, which possess a peculiar acrid taste, will do much to make it popular.

Old seedling Pecan trees are found growing and producing heavy crops annually in the Sacramento and San Joaquin Valleys. A number of seedling trees, two feet and over in diameter, are growing one mile north of Fresno bearing abundant crops.

It is only within the last ten years that pecans have been regarded of sufficient commercial importance to cause groves to be planted in the Middle and Southern States, and the condition of affairs has been brought about by the unexcelled merit of the Papershell Pecan. In California only a very few Papershells are to be found; none of these are over fifteen years old, with the most complete assortment of varieties on the Roeding Place.

CONDITIONS FAVORING ITS GROWTH

The trees thrive in a great variety of soils, doing well in a stiff clay or porous sand, and in Texas they are said to do well on soils underlaid with hardpan, provided proper precautions are taken to blast it before planting. The planting of trees should be confined to soils where moisture is either supplied by natural means or irrigation. Pecans will prove a valuable acquisition to our list of nut fruits in the warm interior valleys of California, Oregon and Washington. In the coast counties, although the tree grows well, it does not mature its nuts, due to the cool, foggy weather, which does not seem conducive to the proper development of the fruit before the dormant season sets in.

For planting along irrigation ditches, the Pecan is the ideal tree as the tree will thrive without cultivation and ripens its nuts after the water is turned out of the ditches.

The advisability of planting only named varieties of grafted or budded trees is conceded by experienced planters. When trees are grown from selected Papershell seeds, they are liable to produce nuts of variable character in shape, size, thickness of shell and quality of meat. The additional cost of growing named varieties either by budding or grafting is caused by the very small percentage which a nurseryman succeeds in growing. If the orchardist will only bear in mind that the increased outlay for budded or grafted trees is offset by the fact that they will come into bearing in less than half the time that seedlings do, and that the nuts will sell for four times as much on the market, their economy is at once obvious.

The Pecan, like the walnut, is unisexual; that is, the male and female organs are not in the same blossom. It sometimes happens that the male blooms (catkins) mature and release their pollen grains before the pistillate or female bloom is in the receptive stage and when this occurs the nuts are hollow shells and it is therefore advisable in planting a pecan grove to plant two or three varieties and alternate with several rows of each. Trees should be planted not closer than 40 feet and on rich bottom soils 50 feet is better. It is entirely practicable to plant some other fruit between temporarily until the Pecan commences to bear profitable crops, when the other trees can be dug up. The oft repeated remark that only trees which have never had their tap root cut will bear, has time and again been shown to be a fallacy; in fact, no harm will result from the shortening in of the tap root, for the tree is really benefited by the more spreading root system. The difficulty of securing a uniform stand and protecting the trees from injury; the marked variation in the size of the trees when the nuts are planted in the orchard where the trees are to grow, has further discouraged this method of procedure. Remarks pertaining to the pruning of Walnut trees are applicable to the pecan.

GRAFTED VARIETIES

	EACH	10	100
1 year, 3 to 4 ft.....	\$1 25	\$10 00	\$ 90 00
1 year, 4 to 6 ft.....	1 50	12 50	100 00
1 year, 6 to 8 ft.....	2 00	15 00	125 00

***Frotscher.** Originated in Louisiana. One of the best. Nuts cylindrical, tapering slightly; shell thin, parting easily from the kernel; flavor delicate, quality excellent; tree thrifty and productive.

Pabst. Another valuable addition to the list of improved Pecans. Nut cylindrical, moderately large, soft-shell, parting well from meat; kernel particularly well filled, bright and of excellent quality.

Russell. Tree very vigorous and productive. Nut oval-pointed, large to very large; shell very thin; a true paper, shell; kernel plump; flavor delicate, and of superior quality.

Schley. This variety is becoming recognized in the southern states as one giving considerable promise and although its adaptability to California conditions has not been tested to any extent, we have every reason to believe it will find conditions here equally as congenial for its best development. Tree bears heavily; the nuts are medium; shell is thin; kernel full and plump and invariably fills well. Nuts are said to sell for higher figures than any other variety in the eastern markets.

***Stuart.** Introduced by the late W. R. Stuart, Ocean Springs, Miss. A standard for commercial orchards.

Has all the points for a profitable pecan; large size, desirable in shape and fine in appearance; always well filled, meat of good flavor.

Success. A grand nut of recent introduction; is of the largest size, cylindrical and tapering at the apex; shell very thin and parting freely from the kernel, which is full, plump and of the best quality. Tree vigorous and thrifty and a regular and abundant cropper.

***Van Deman.** Large and oblong in shape, running 45 to the pound; shell moderately thin, cracks well and yields plump meats of good quality.

Pecan Seedlings

	EACH	10	100
3 to 4 ft.....	\$0 60	\$5 00	\$40 00
4 to 6 ft.....	70	6 00	50 00

THE WALNUT

This tree prefers a rather loamy, deep, rich soil, and no nut yields larger and more profitable returns; the tree is practically free from insect pests, and when once established requires little care as far as pruning is concerned. Good and thorough cultivation is necessary for activity in the growth of the tree, causing it to respond with bountiful crops. The planting of seedling walnut trees has been generally abandoned on account of the many advantages of grafted trees, which may be summed up as follows: (1) they usually commence to bear profitable crops much earlier than seedlings; (2) they reproduce the variety from which buds and grafts were taken, so there is an absolute certainty that the character of the parent tree will be transferred to the young stock; (3) perpetuation of the bearing qualities of the parent tree with nuts of identical quality. These points form the basis of success for the grower, for the extra prices realized for the product of the grafted trees in connection with their early bearing qualities more than offsets the additional first outlay. In addition to other facts mentioned, the California Black Walnut (*Juglans Californica*) root, which is used as a stock, has a decided influence in causing the graft to grow more vigorously and it will also adapt itself to a wider range of soil conditions than trees on their own roots.

HOW TO PLANT

For commercial planting, trees are usually set 40 feet each way, although in some instances where the soil is exceptionally fertile, trees are set 50 feet apart, for as the tree matures it makes a wide spreading top, so that it is no uncommon sight to see branches even at the latter distance interlacing.

All the talk that the cutting of the tap root of the walnut interferes with its bearing qualities is mere twaddle. Practically all the orchards in California are transplanted trees.

PRUNING

Even if trees are ten feet high, they should be cut back to 3½ feet from the ground after being set. In the interior valleys growers have even found it expedient at times to cut trees down to 12 inches and train up a new stem. If there are any advantages in this plan of procedure, they are evidenced by the tremendous vigor and the prevention of sunburn of the new shoot, which must of course be staked the first year. The coined expressions that this tree or that should not be pruned because it would be ruined, has had the tentacles of misapprehension more closely interwoven around the walnut than possibly any other tree. Which is preferable, the tree with all its fruit bearing wood in the very top or the one that is liberally supplied with laterals as nearly as it can be obtained from the point from which the head is started? If you can secure a more striking tree with a broad bearing surface, is it not common sense to suppose that you are not going to reach the goal you are aiming at, if you don't do something to check the growth of the framework branches?

No person of intelligence will deny the fact that one's arm held at length has not the strength to resist the same strain as when the forearm is held at right angles to the arm. The

same principle applies to the main limbs of the tree. The development of elbows promotes strength, increased bearing surface and a perfect tree. Cutting back the framework branches one-half the first winter after planting; pruning the laterals in the same manner the second winter and thinning out when there is a tendency to overcrowding, followed by a more moderate treatment in the third winter, and the checking of rampant growing limbs in the fourth season when they have a tendency to outstrip their neighbors, and following out this last recommendation in subsequent years, are requisites easily carried out to make a perfect tree.

SPECIAL FEATURES

The holes for planting should not be less than three feet deep and two feet in diameter. Cut the tap root off at about twenty-four inches and trim off all bruised and broken lateral roots before planting. A liberal application of thick white-wash, in which some salt or blue has been dissolved, is very beneficial, as it prevents sunburn.

The Walnut, like the Pecan, is unisexual; that is, the flowers of both sexes although produced on the same tree, do not occur in the same flower. The male flowers are called catkins and in the spring are distributed throughout the tree and look like tassels; the female flowers are like two little horns at the terminal ends of the new growth.



Franquette Walnut—Pruned for Several Years to Secure Symmetrical Head. This Having Now Been Established, Pruning in the Future will be Confined to Cutting Interfering Branches and Checking Growth of Branches Which Might Cause the Tree to Become Unbalanced. It is Practical to Have Vines Growing Among Such Trees Because of Their Deep Root System.



These Magnificent Trees Lining a Road Show the Utility of Using the Pecan as a Border Tree as well as Being a Source of Income from the Bountiful Crop it will Produce Annually. Orchard Adjoining Thrifty and in No Way Affected is Another Point in Its Favor. See Page 26.



Thin Shelled Pecans Sell for \$1.00 per Lb. in New York. See Page 26

One of the striking peculiarities of the French type of walnuts is their late blooming. This peculiar feature of these walnuts was no doubt developed in Grenoble, France, where the Chaberte, Franquette, Mayette and Parisienne originated, to overcome the nipping of the blossoms by late frosts in the spring. When the French walnuts are planted among such varieties as Santa Barbara, Placencia Perfection and others, the difference is very striking, for they rarely have a bud swelled by the middle of April, while the California varieties will be clothed with all their foliage.

Deep alluvial soils should always be selected for planting walnuts, and a liberal supply of water should be available, either by surface irrigation, or the soil in which the trees are planted should be of a moist nature.

It is only recently that the San Joaquin and Sacramento Valleys have been found to possess climatic and soil conditions making the culture of the walnut a very profitable undertaking, particularly of the French varieties grafted on California Black Walnut root.

Walnuts—Prices and Varieties

Except Eureka and Willson Wonder

Grafted on California Black	EACH	10	100
3 to 4 ft.....	\$ 90	\$ 8 00	\$ 70 00
4 to 6 ft.....	1 10	10 00	90 00
6 to 8 ft.....	1 25	11 00	100 00
8 to 10 ft.....	1 50	12 50	110 00
Prices for Eureka on California Black	EACH	10	100
4 to 6 ft.....	\$1 25	\$11 00	\$100 00
6 to 8 ft.....	1 50	12 50	110 00
8 to 10 ft.....	1 75	15 00	125 00

Bijou. (Large-fruited.) Nut of immense size but the kernel is small and does not fill well. Commercially of no particular value.

Chaberte. A very valuable variety; nuts good size; kernel extra fine flavor; a good bearer. Considered one of the best nuts, particularly in the San Francisco Bay region. Blooms late in spring.

***Concord.** This popular variety originated from a seedling planted years ago by the father of Mr. George Westcott, in Walnut Creek, Contra Costa County, Cal. The fact that the tree has been a strong grower, enormous bearer, producing large, smooth, round nuts, well filled, has placed it in the front rank as the sort to plant by all Walnut growers in this district. It is certainly worthy of trial in other sections of the State.



A Grafted Walnut Tree Just From the Nursery Row.

Same Tree Topped and Root Pruned for Planting.



***Cut-leaved.** A most graceful ornamental tree, particularly adapted to gardens and lawns; foliage deeply cut and laciniated; nut large, elongated, smooth shell; kernel sweet and well filled; very best quality. Hardy where other soft shell walnuts are not; stands zero weather.

***Eureka.** Tree is remarkably vigorous, upright grower, leaves and blooms fully three weeks later than seedlings of the Santa Barbara Soft-Shell, and is therefore very desirable in localities subject to late frosts. An immense producer. Nuts large, elongated, smooth and tightly sealed.

***Franquette.** The standard among walnuts, and commanding a higher price in the market than any other. Mr. Roeding recognized the superiority of the famous Voorman Strain in the Franquette Walnut orchard owned by Mrs. Voorman at Santa Rosa, California, after making a number of special trips of investigation and we were the first to secure scions from this famous orchard and have kept this strain pure. Nut large, elongated, oval and very attractive in form; kernel full, sweet, with a very rich nutty flavor. Blooms late in spring.

***Mayette.** This ranks with the Franquette as one of the leading commercial varieties. Size large, and unequaled as a dessert nut; an abundant bearer; starts late in the spring.

Mayette Rouge. Identical with the Mayette, except that the nut is reddish.

***Neff's Prolific.** A rapid-spreading grower with smooth and clean bark. Blooms late, but ripens its nut early. Nuts large, oval, slightly ribbed and tightly sealed. Trees fifteen years old in orchard form have produced 215 pounds of fine, large nuts. Highly resistant to blight. Especially suited to Southern California conditions.

Parisienne. Large, excellent, starts late in the spring. Originated in the southeast of France and on account of its exceptional beauty named Parisienne in honor of the capital of France. The nut is large, broader at the small end than the Franquette and Mayette, and has a very pretty shape.

***Placencia Perfection.** A vigorous grower; commences to bear abundantly about the fifth year after planting. An improved Santa Barbara Soft-Shell. Most popular walnut in Whittier district. Nut large; shell smooth and thin; kernel white and sweet.

***Willson Wonder.** Originated by F. C. Willson and probably a seedling of the Bijou, to which it bears a very close resemblance as to size, which is exceptionally large. The shell is much smoother. The variety is noted for its precocity, even in the nursery row being loaded with nuts. Valuable for planting in the confines of the home grounds.

Prices for Willson Wonder

	EACH	10
3 to 4 ft.....	\$2 25	\$20 00
4 to 6 ft.....	2 50	22 50
6 to 8 ft.....	3 00	25 00

Walnut Seedlings

	EACH	10
4 to 6 ft.....	\$0 50	\$4 00
6 to 8 ft.....	60	5 00
8 to 10 ft.....	75	6 00

American Black. Moderate grower, starting late in the spring. Nut is very hard, with corrugated exterior.

California Black. Rapid growing and desirable as a stock for grafting or budding; adapts itself to all conditions. Nut medium size; hard, smooth shell.

Walnut Trees for Timber

Grafted on California Black Walnut:

	EACH	10
4 to 6 ft.....	\$1 00	\$8 00
6 to 8 ft.....	1 25	10 00
8 to 10 ft.....	1 50	12 50
10 to 12 ft.....	2 00	15 00

Paradox. It grows fully a third faster than the California Black, is very hardy and free from pests. Produces timber light in color and with fine, compact grain. In cold climates, winter protection should be given the trees for two or three years. Very rarely produces any quantity of nuts.

Royal. A stately, symmetrical tree, with all the good qualities of the California Black, exceeding it by far in its rapidity of growth. The wood is exceedingly hard, close-grained and takes a silky polish, more nearly resembling the tropical mahogany.

Japanese Varieties

	EACH	10
3 to 4 ft.....	\$0 50	\$4 00
4 to 6 ft.....	60	5 00
6 to 8 ft.....	75	6 00

Japanese. Nuts produced in clusters; shell smooth; kernel very sweet.

THE FIG

Figs grown in the United States either for eating fresh or for drying are of one species, viz: *Ficus carica*. There are an endless number of varieties of figs. In many instances on account of the wide distribution of this fruit throughout the world, the same variety may be blessed with any number of synonyms. This is the case with many sorts grown in California today. Not over six varieties comprise the list of commercial varieties for all purposes in California.

LOCALITIES FAVORABLE FOR THE FIG

It is safe to say that no deciduous tree grown in the semi-tropic and temperate zones will adapt itself to a wider range of climates and soils than the fig. Figs can be used for such a variety of purposes, namely: drying, canning, preserving, shipping in the fresh state and for home use, that a wide range is open for their successful exploitation. To produce the finest dried figs, with the thinnest skin and rich in sugar, a warm dry climate is an important factor. They will withstand a temperature of 18 degrees Fahrenheit in the winter months without being injured; hence their geographical distribution is very wide.

BRIEF HISTORY

Many of the countries whose shores are washed by the Mediterranean Sea are producers of figs commercially, but the recognized fig center of the world today is in the Mendere Valley about forty miles distant from Smyrna, Asia Minor. It is here that the Smyrna Fig of commerce has been grown for centuries, and the secret of their culture was so closely guarded. It was only after fourteen years of constant and persistent effort on my part that I succeeded in 1890 in producing the first Smyrna figs in the United States by artificial pollination, and ten years later having succeeded in establishing the *Blastophaga grossorum*, with the assistance of the United States Department of Agriculture, the first Smyrna figs were produced in a commercial way.

The first figs introduced into the United States were brought, as nearly as can be determined, by the Spanish Padres from Mexico in 1769. They were planted at the San Diego Mission. This fig is still a standard in California. The tree is a great grower and produces an abundance of what is known as the Breba or first crop, maturing in late June and July and the second crop ripening from August to October. The very fact that this and other varieties of figs were grown in California, from which abundant crops were being gathered annually, caused the whole subject of caprifigation to be branded as an idle dream. It is now conceded that the Smyrna type of figs are in a class by themselves, and unless the pollen is conveyed by the *Blastophaga* to the edible fig, all the figs drop off prematurely when about the size of marbles. I knew this to be a fact, for in my orchard of sixty acres of Smyrna figs, which I cared for over a period of fourteen years, all the figs dropped off until the *Blastophaga* was established in the Capri fig trees.

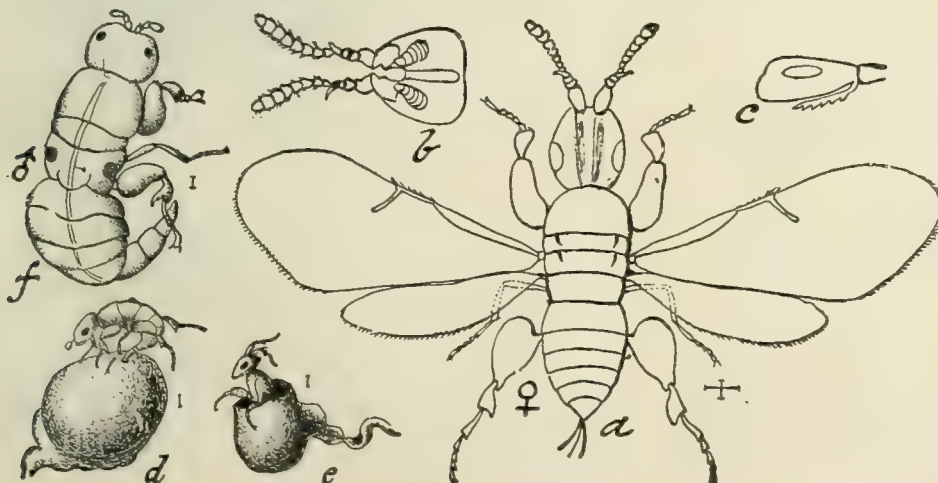
The fundamental difference between the Adriatic and Smyrna class of figs is that the former matures its figs without the fig wasp, while the latter does not. The Adriatic figs seem to possess all the qualities of the Smyrna so far as general appearances go, but on investigation it will be found that all the seeds are hollow, while in the Smyrnas each seed contains a kernel, giving the fig a nutty flavor and a delicious syrupy sweetness found in no other fig. The great interior valley of California, with its favorable climatic conditions (there being no rain in the summer months, and the air being both warm and dry) present possibilities which are not equaled in any other part of the world. The output of Smyrna is in the neighborhood of 30,000 tons annually. California produces about 10,000 tons of dried White Adriatic, Mission and Calimyrna. The United States imports from 10,000 to 13,000 tons annually. The demand for figs for shipping, preserving and drying is growing by leaps and bounds, and it is up to the growers to embrace their opportunities and engage in this, one of California's most promising industries.

CAPRIFICATION

To give even a short review of caprifigation would occupy pages of a book several times as large as this one. I merely wish to say that for years the subject was regarded as an illusion by prominent horticulturists, and I was subjected to criticism, and met with discouragements too innumerable to mention, before I finally, after many years of persistent effort, succeeded in convincing the skeptics that Smyrna figs could not be grown without caprifigation. Plant life has just as many intricate problems as human existence. We have in the fig, a problem which is beyond human ken. It is very difficult indeed to give any explanation why the edible fig "*Ficus carica*" has within its range so many hundred varieties of figs, which do not require fertilization of their flowers to produce edible fruit, while in the Smyrna type of figs unless the flowers are pollinated the figs drop off and never mature. The fig is a fleshy receptacle to which is attached thousands of minute flowers. Botanically, flowers grouped together like this are characterized as an inflorescence. The fig differs from practically all other classes of plants in that no ordinary insect can reach its flowers, because the receptacle in which they are enclosed has only one small opening in the apex of the fig to which to all appearances, as far as human intelligence and eyesight can discern, it would be impossible for any insect to enter. Fortunately for the thousands of people who enjoy eating figs, a great many varieties mature their fruits and are perfect from the standpoint of the consumer, although scientifically imperfect, because the seeds are hollow, the flowers not being fertilized.

When California, twenty years ago, began to engage in the business of drying figs and shipping them to the East, it did not take long to discover that there was something decidedly lacking in our product when compared with the famous fig of commerce from Smyrna. The very decided difference in quality was attributed to soil and climatic conditions and those who were ready to concede that a little wasp could so completely change the character of a fruit were in the abject minority. Although it is not necessary to have the fig wasp for the White Adriatic, nevertheless many growers claim there is a decided improvement in this and even in other varieties of figs where the wasp has made its entry.

One point must not be overlooked, that the edible fig grows on an entirely distinct tree from the Capri fig. The Capri fig serves as a home for the several generations of the wasp and its figs are not edible. The Capri fig produces three distinct crops annually, the first one pushing out on the wood of the previous year's growth in March; the second crop comes on the new wood in July; the third in September. These several crops are designated as follows: Profichi or spring crop; Mammoni or summer crop; Mamme or overwintering crop. The Mamme figs remain on the trees all winter, from September until into April of the following year, the wasps during this period being in the larvae stage. When the Capri fig starts to grow in the spring the wasps pass out of the larvae into the pupae stage, and finally when the Profichi figs are about the size of marbles, which usually occurs in April, the female wasp passes from the Mamme figs and forces her way through the scale of the orifice into the Profichi figs, (which to the naked eye is closed) and deposits an egg in the ovaries of the gall flowers. The life history of the wasp in this crop is the same as in the others, the only difference being that the metamorphosis takes place more rapidly. When the crops reach maturity there are both males and females. The males are wingless and are readily distinguished by their reddish tinge; the females are of a lustrous black color and are winged. The male wasp crawls out of the gall, first, intuitively locates the female in the gall in which she is confined, gnaws an opening with its powerful mandibles and impregnates her. She then enlarges the opening made by the male and starts on a tour of exploration. Her sole object in life is to perpetuate her species and to do this she must find the flower of another fig to deposit her eggs. As the Profichi crop bears the most important part, in her relation to mankind, for the sake of argument we will take it for granted that the female wasp is coming out of the Profichi crop. As she prepares to



Blastophaga grossorum.

A, Adult female; very much magnified.

B, Head of same from below.

C, Head of same from side.

D, Male impregnating female.

E, Female issuing from gall.

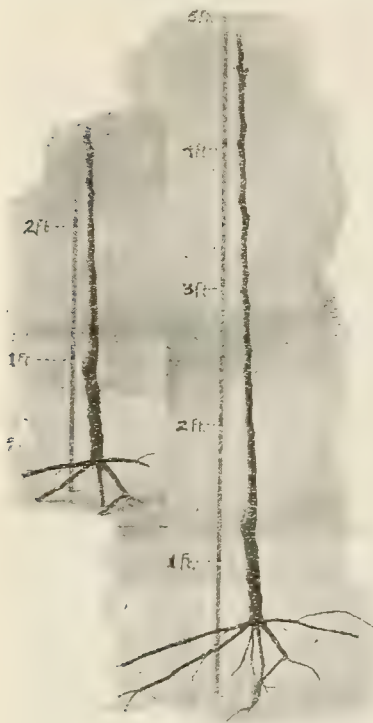
F, Adult male enlarged.

The narrow lines close to each figure indicate the actual size of these insects.

take her departure she passes through the male or staminate flowers, surrounding the orifice of this crop and her body is completely dusted with the pollen grains. In the great fig growing districts this flight occurs in the month of June. It is in this stage of her existence that the hand of man and nature interferes with her effort to propagate her progeny.

The Profichi figs are gathered from the trees and are distributed in oval baskets made of $\frac{3}{4}$ inch poultry netting or placed in small strawberry or fruit baskets which have been previously hung on wire in the Smyrna Fig Trees. At this time the Smyrna figs vary in size from a small pea to a large size marble. The wasp forces its way between the scale of the orifice of the edible fig, going into it for the avowed purpose of laying its eggs.

Fortunately for the fig industry it is frustrated in its efforts to reach the ovaries of the female flowers with its ovipositor to deposit eggs. In its persistent and determined effort to find a receptacle for them it crawls around the inside of the fig and



One-Year Tree From Nursery (Left Hand) Cut Back For Planting.



A One-Year-Old Orchard Grown Fig Tree with the Framework Limbs Well Divided and Cut Back.

dusts the pollen on the pistillate organ of the female flowers. The insect is exceedingly small and it finally perishes within the fig, being absorbed by its juices or it crawls out and dies. One wasp is sufficient to pollinate the numerous flowerets on the inside of the fig, but it very often occurs that on breaking open a fig, three to four insects will be found crawling around. Within a couple of days after the wasp has penetrated the fig, its entire appearance changes; it becomes plump and firm and of a deep green color, while the figs on the same tree which the wasp has failed to reach turn a sickly yellow, shrivel up and drop off. Nature again asserts herself in behalf of man, by delaying the pushing out of the Mammoni crop of figs until the season for caprifying the edible figs is practically over with. The Mammoni is the lightest of all the crops, and it is very difficult to find any figs of this crop in the capri fig tree until July. There are just enough of the late Profichi figs on the tree at this time to supply wasps for the Mammoni crop.

Growers who fail to secure a good crop of figs on their Smyrna trees have only themselves to blame for not studying their problem, for a light crop is traceable to an indifference on the part of the grower in caprifying. There are several varieties of Capri figs, some of which ripen their fruit early, while others are later. As the edible figs are not in the receptive stage at the same time this is a fortunate coincidence. In order to know how many Capri figs to place in a tree to secure the best results, multiply the age of the tree from its fourth to its ninth inclusive by five and from 10 years and up by 10 and you will not go very far wrong in placing enough figs in your trees to secure the very best results. From 3 to 10 figs should be placed in the trees every third day or even oftener than this. The frequency with which this is done being determined by the rapidity with which the Capri figs ripen.

PLANTING AND PRUNING

The Capri fig makes a very desirable shade tree, and as there is no mess from the dropping fruit, growers will make no mistake in planting them around their homes. The additional protection from the buildings is a valuable asset in years when low temperatures may prevail during the winter months. The Mamme crop will withstand a temperature of 20° Fahrenheit without injury, but anything lower than this, particularly

over a protracted period will freeze the figs on the outside branches. Capri figs should be planted 30 feet apart, for nearly all varieties are strong growers. They may be used to advantage as avenue or border trees. None of the edible types of figs, whether they be of the Adriatic or Smyrna class should be planted closer than 30 feet. On deep rich soils 35 feet is better. In Asia Minor orchards, which have been planted within the last forty years are set in the square system and none of the trees are planted closer than 35 feet apart.

Although the fig will stand all kinds of neglect after it is established, too great emphasis cannot be laid on the close attention which must be given in transplanting the trees from the nursery to the orchard. The roots of a fig tree are very susceptible to exposure, hence they should be carefully covered in transferring from the trenches to the field. It is surprising what effect the puddling of the roots will have in preventing their drying out even in cases of severe winds, and we cannot emphasize the importance of this too strongly. To make a puddle, dig a hole eighteen inches deep, two feet in diameter, fill it partly full with heavy soil, mix with water until you have a muck the consistency of a heavy paint. Dip the roots into this, and give no further concern about their drying out even if exposed to the direct rays of the sun for a short period.

Before planting cut off all bruised and lacerated roots and make a fresh cut on all other roots, so they have a smooth, clean surface. The tree when planted should not stand over three inches deeper than it stood in the nursery row. Never neglect to settle the earth around the trees with not less than fifteen gallons of water. After the water has soaked away fill in with fine soil without tramping. No greater mistake can be made than to wait for rain or for water to be turned into the irrigating ditches. After the tree is planted, cut back to twenty-four inches from the ground, and cover the wound with rubber paint, or grafting wax.

The first winter cut the branches of the one year trees back to about twelve inches, leaving not more than four to make the head of a tree. Have these distributed in such a manner that there will be sufficient room for them to expand without crowding as the tree grows older. The second season cut not less than two-thirds of the new growth, leaving not more than two shoots on each of the framework branches. Any branches on the under side of the limbs having a tendency to droop to the ground should be removed. The third season shorten in the new growth about half, leaving the same multiple of branches on

Two-Year Tree Cut Back with Framework Branches to Promote Vigorous Growth and Sturdiness. Note this Tree is Already Assuming a Shapely Head.



each of the previous years' shoots as were left the year before. In after years the pruning is limited to the removal of branches which cross or interfere with each other and checking the growth of branches making an excessive growth. Young trees should always be protected with tree protectors to prevent sunburn.

CROP SURE—NO FAILURES

The certainty of the crop is indicated by the policy pursued by the packers of dried figs, who make it a practice to purchase the entire output of an orchard extending over a period of years at a fixed annual sum. The prices paid depend largely on the size of the trees, and range from \$1.00 to \$5.00 per tree. It is no unusual thing for these contracts to involve sums as high as \$5000.00 per annum. The contractors assume all the expense of harvesting, the grower merely prunes and cultivates his orchard under this arrangement. The very fact that our importations of Smyrna figs are constantly increasing, the annual amount averaging not far from 13,000 tons, is in itself sufficient indication of the possibilities of a great industry under the favorable conditions presented in many sections of our Pacific Coast States.

Talk about living, or rather luxuriating, under your own vine and fig tree beneath our balmy skies! If this is not a truism expressing the delight of going back to the soil in the glorious climate of California, what is?

THE CALIMYRNA FIG

Calimyrna is a coined name and is registered in the patent office of the United States. There are a number of varieties of Smyrna figs, but there is only one genuine fig of commerce and it is to it the name has been given in order to prevent any confusion.

Smyrna Class

	EACH	10	100	1000
2 to 3 ft.....	\$0 40	\$3 00	\$25 00	\$200 00
3 to 4 ft.....	50	4 00	30 00	250 00
4 to 5 ft.....	60	5 00	40 00	300 00

Bardajic. A magnificent table fig, with rich, deep purple pulp. August and September.

Calimyrna. The genuine Smyrna fig packed under the name of "Erbeyli" (signifying fine fig) in Asia Minor, and known in Turkish as "Lop," and in Greek as "Lopia." Large to very large; turbinate, pyriform; very short, stalk short; ribs distinct, orifice large, of pale ochre color and widely open when the fig is mature and before shriveling; skin lemon-yellow; pulp reddish-amber, sometimes pale amber, turning to dark amber just before falling; seeds large, yellow, fertile, overspread with a clear, white syrup, giving the fruit a richness and meatiness unsurpassed by any other fig. Tree of spreading habit, leaves medium to large and five lobed. The dried figs contain 64 per cent sugar, which is $1\frac{1}{2}$ per cent more sugar than found in the imported Smyrna fig. Dries readily and with less trouble and expense than any other fig, dropping to the ground of its own accord, being practically dry when it falls and requiring when placed on trays, only from two to three days exposure to the sun. This is the world-famous fig of commerce. August to October.

Kassaba. Large; almost globular; skin pale green; pulp reddish pink. September.

Adriatic Class

This class of figs does not require pollination to mature its fruits. They will adapt themselves to a wider range of localities than the Smyrna types.

	EACH	10	100	1000
2 to 3 ft.....	\$0 40	\$3 00	\$25 00	\$200 00
3 to 4 ft.....	50	4 00	30 00	250 00
4 to 5 ft.....	60	5 00	40 00	300 00

Bourjasotte Panache. The most ornamental of all fig trees. Fruit medium, striped green and yellow. Early August.

Brown Turkey. The earliest large fig. Color violet-brown. Identical with the so-called Magnolia Fig.

***Mission. (California Black).** Stands in the lead of all black figs for shipping and drying. Tree a vigorous grower and heavy bearer. Late in June and August.



Third Season—A Three-Year-Old Tree Pruned. The Head of this Tree Now Being Fully Outlined the Pruning in the Future Should be Confined to Removing Interfering Branches and the Cutting Back of Such Branches as Have a Tendency to Droop.



An Eight-Year-Old Well Pruned Fig Tree. Notice the Immense Bearing Surface, Which is Only Obtained by a Systematic Method of Pruning. Without this Pruning the Tree Would Have a Few Branches Running Straight Up, and a Consequent Lack of Laterals, Thus Impairing Very Materially the Bearing Capabilities of the Tree.

San Pedro Black. Very large, elongated, ovate, no stalk; skin smooth, violet-black with green neck; pulp red, coppery tinted violet. One of the largest of figs; excellent for table use. Early in August.

San Pedro White. (Fico de San Pietro). "Apple Fig." The largest and handsomest early fig in existence, with excellent flavor and sweetness; skin golden-yellow, shaded green; very palatable. The second crop drops off unless caprifigged. Middle of June and late August.

Verdal Longue (Sultana; Verdal Honde). Very rich, sweet, aromatic. September and October.

***White Adriatic.** Fruit large; greenish yellow; pulp carnation-red. Second week in August.

White Celeste. A very small fig of amber color, pulp reddish. Fine for preserving and crystallizing. Early in August.

***White Endrich (Kadota).** Introduced over forty years ago by the well known nurseryman, Mr. W. B. West, of Stockton; original name lost and given name of Endrich, a fruit grower in the vicinity of Stockton, by Mr. West; has been sold under following names: White Endrich, White Pacific, Verdoni, Smyrna, Kadota. Medium sized; thin, white skin; pulp white. One of the best for canning and pickling. Inferior for drying. Never sours when planted in dampest locations. First week in August.

SUPPLYING CAPRI FIGS

Our customers, if they will kindly notify us before March 15th in the year their Capri figs are four years old, will receive free of charge a colony of infested figs in April for the purpose of colonizing the wasp in their Capri fig trees. At the most this will not require to exceed five figs to each tree. Please bear in mind that we do not supply Capri figs for the pollinating of your Smyrna fig trees. In later years if we have figs to spare, we will be pleased to supply them at the market price.

Wild or Capri Class

It is necessary to have one Capri Fig tree with every 20 Smyrnas. Even where one Smyrna tree is planted, a Capri Fig tree should be ordered. In plantings of any consequence it is important to have an assortment of Capri Figs.

	EACH	10	100
3 to 4 ft.....	\$0 50	\$4 00	\$30 00
4 to 5 ft.....	60	5 00	40 00

Capri Howard. Ripens shortly after Capri No. 1. The figs are large and the Profichi crop has an abundance of male flowers, which always mature. This variety is one of the best of the late introductions.

Capri Milco. One of the most promising varieties. A good producer of all the crops necessary to perpetuate the insect. Profichi crop rather late in maturing and valuable on this account.



Capri Fig Tree with Mamme or Winter Crop of Figs.

FIGS—Continued

Roeding's Capri No. 1. A very rapid, vigorous grower of spreading habit and with very large leaves. Produces an abundance of all crops; Profichi, Mammoni and Mamme, and matures its first Profichi June 12. Particularly valuable on account of its producing all the crops necessary for successfully carrying through all the generations of the Blastophaga.

Roeding's Capri No. 2. A very upright grower, branches very slender; leaves small. Produces an abundance of the Profichi crop, maturing somewhat later than the foregoing, the first figs ripening June 16, in which its value principally lies, as it lengthens the season of caprification of the Smyrna Figs.

Roeding's Capri No. 3. A decidedly distinct variety, branches much heavier and more closely jointed, than Nos. 1 and 2; leaves small and serrated. Figs of the Profichi crop very large, heavily ribbed and developing a larger number of galls with insects than either of the other two varieties, the first figs ripening June 8. A rather uncertain bearer of the other crops.

Capri Magnissalis. By far the largest caprifig in our collection. Introduced by Mr. Geo. C. Roeding who mailed buds of this variety from Aidin where he discovered it in June, 1901. Figs of the Profichi crop 3 inches long by 2 inches cross diameters. Figs commence to ripen shortly after the Profichi of Roeding's Capri No. 1. From 1500 to 2000 insects will issue from a single fig, and as the male flowers are always abundantly supplied with pollen, never turning black and rotting, a bad fault in some of the Italian types of caprifigs and seedling Smyrna caprifigs; it is well worthy of a trial.

As none of the Caprifigs are named in Smyrna, we have named it after Mr. S. G. Magnissalis, who extended so many courtesies to Mr. Roeding on his visit to Aidin, Asia Minor.

Van Lennep Capri.

This variety has been grown by us for a great many years. Introduced from Smyrna by the late D. Van Lennep, of Auburn, Cal. Ripens June 10th.



A Well Formed Three-Year-Old Calimyrna Fig Tree Beginning to Bear.



Figs Grown by M. W. Miner, Los Angeles Co., Cal. See Letter Below.

"I am enclosing kodak pictures of some Figs that I raised this year on trees that I bought from you in 1911 or 1912. Just merely to show you that I have made a success of them. This is the second year's heavy crop they have grown."—M. W. Miner, Los Angeles County, Cal., Sept. 30, 1916.

THE OLIVE

In California the olive has long since passed the experimental stage and is now being produced in quantities for pickling and oil purposes. The important position that it is destined to occupy as one of our leading horticultural industries can no longer be questioned.

California possesses the same soil and climatic conditions in which the olive thrives in the countries of Europe, Asia and Africa, and there is absolutely no obstacle to prevent our supplying the demands of not only this country, but becoming exporters of the numerous products for which the olive is noted.

The two countries which stand out most prominently as producers of olives are Italy, famous for its oil, and Spain, for its green pickled olives. In Italy there are 2,688,738 acres planted to olives, and according to reliable statistics, Spain has 3,546,515 acres. There are many insect pests threatening the olive in those two countries, which frequently curtail the output. There is very little likelihood of any of these pests or diseases gaining entrance into California, because we have all the leading and best European varieties growing here already. We have hundreds of thousands of acres, extending almost from the northerly to the extreme southern part of the state, in which olives can be successfully grown.

PICKLING THE OLIVE

The ripe pickled olive is permanently a California product. People who never eat the green olives, and those who do, usually have to acquire the taste for them, take to ripe olives like a duck does to water. Those who are engaged in the manufacture of olive pickles encounter only one difficulty, and that is to secure sufficient of the ripe olives to satisfy the demand of the consumer.

Every home should have an olive tree where there is sufficient ground, for one tree will supply all the olives which the average household will use for several months.

PLANTING

Today the transplanting of olive trees is comparatively an easy matter to what it was twenty-five years ago, when the industry was just beginning to attract the attention of horticulturists. At that time, unless the trees were potted plants, they invariably died. After years of experimental work the cause of the trees failing to grow was found to be due to not topping the trees and shortening in the lateral branches when digging. This method of trimming overcomes much of the evaporation and loss of vitality through the foliage and much of the trouble formerly experienced has been overcome. In nearly all cases where trees fail to grow the trouble can be traced back to not again cutting the trees back to twenty inches from the ground after they are set or to careless handling on the part of the planter after the trees are received.

In order to insure the best results for the orchardists, we make an invariable rule to top prune and shorten all the lateral branches before shipment from the nursery. This method of trimming overcomes the evaporation and loss of vitality through the foliage, and is a very important point that we have learned by years of experience.

We do not recommend that olive trees be transplanted until the middle of February, for it is only in a few places that the growing season starts in earlier. When received at destination take them out of the receptacle in which they are packed and heel them in a sandy, warm soil and then turn a hose loose in the trench so that the soil will fill in all interstices and exclude the air. After the soil is settled fill in with loose soil and tramp it down. The trench should not be less than fourteen inches deep. The trees should stand upright, rather than at an angle. Treated in this manner they will remain in perfect condition until the ground is in shape for planting. As soon as they are taken out of the trenches and prior to planting, all bruised and lacerated roots should be cut off and a new, clean cut made on all the other roots. Before taking out to the field, puddle the roots in the same manner as is recommended for the fig. This particular phase of the operation must not be overlooked. Dig the holes to receive the trees as recommended for the general run of deciduous fruit trees and follow the other directions faithfully. Do not fail to cut the tree back to 2 feet after being planted and shorten all laterals to two inches. If there should be no laterals, cut the trees back anyway, for the olive will always force out its blind buds.

Olives may be taken up in the late fall or in midwinter, provided they are dug with a ball of earth. The trees start more quickly than those taken up with naked roots and almost a perfect stand of trees is insured. There is considerable additional expense entailed in digging and packing and in railroad charges, for a balled olive tree will weigh at least thirty pounds each.

The theory that olives can be grown successfully on poor, rocky soils has been exploded long ago. It is a fact that olive trees are found growing in such soils in many countries of Europe, as the writer knows from personal observation, but this does not indicate that olive culture is a success in such soils. The trees usually are scrawny, entirely lacking in the essentials which go to make a perfect tree, and would cause the orchardist accustomed to the fine, luxuriant trees as grown in California, to have heart failure if he had such prospects before him.

Do not make the mistake of planting the trees too closely together. The olive is a gross feeder and sends out a mass of small surface roots. Never plant closer than thirty feet in a good loamy soil, and forty feet apart on rich deep soils, with a

deciduous tree between, with a view of taking it out as soon as the olives attain any size. Even in localities in which there is a bountiful rainfall, the trees should be irrigated not less than four times in the growing season for the first three years of their existence.

PRUNING

When the tree is planted it should stand at least four inches deeper than in the nursery rows. Allow the tree to grow without much interference the first year, for the more vigorous the new growth and the more of it, the stronger will be the root development. The first winter after planting trim all the growth off except 4 or 5 branches close to the head, and have these properly distributed, as they will ultimately form the main framework branches. Cut off two-thirds of their growth. The second winter trim the tree in such a manner as to leave

from one to two laterals on the original framework branches, bearing in mind that these branches should have an upright tendency, and cut them in turn back at least one-half. In subsequent years this same method of thinning out and shortening in should be followed, and this cutting should be quite severe for at least four years. The workman should not always prune to an outside lateral, but should exercise some judgment to balance the tree by causing some branches to slope inwardly and force others to have an outward tendency as illustrated in the cuts. This promotes sturdiness in the tree and a healthy uniform growth, also a broad bearing surface, many small lateral fruit bearing branches, and naturally more fruit than an unpruned tree, the growth of which, if not checked, would consist of several straight, upright shoots with all the fruit-bearing branchlets in the top. In case of a heavy crop, these branches being without any natural braces, which would have developed by pruning, would bend over and in many instances break off. After a number of years the shearing off of the small laterals will cause many so-called "crows-nests" to form in the



Same tree as below—
The First Season's
Growth of an Olive
Tree in the Orchard.
Note how the branches have been shortened in and thinned out, and that as far as possible branches having an upward tendency, have been encouraged to grow.



The Importance of Shortening in These Branches Cannot be Over-Estimated. It is Our Observation that Unprofitable Trees are Often the Result of a Want of Pruning.

trees, and the new growth will be rather weak. It will be at least 15 years before the trees will reach this stage, but when they do there should be no hesitancy in cutting them back severely and thinning vigorously, to promote a strong, new growth. Even before this age the trees will have a large amount of inside growth, which, when it is no longer productive, should be cut out entirely. This does not mean necessarily that the trees should be thinned out like a peach, for this would be a mistake, but that wood which indicates by its appearance that it has lost its vitality should be removed, for it will soon be replaced by new wood.

Our nurseries have been more closely associated with the growing of the Olive than possibly any other concern in the State. Twenty-five years ago we were growing over 30 varieties of olives. At that time equal attention was being given to

both the oil and pickling varieties. Now that it has been demonstrated that a good pickling olive makes an excellent grade of oil in nearly all cases, the elimination of so many varieties has been very pronounced. The demand has dwindled down to a few standard varieties which seem to meet the exacting demands of the firms engaged in the business commercially.

We are devoting our attention particularly to growing the best types of these recognized standards, the cuttings having been taken from our own orchards, of which there are none superior in the State.

Olive trees are sold on the basis of caliper measurement, the heavier the body, the higher the price.

Prices and Varieties

Write for special prices on large quantities.

	EACH	10	100	1000
1/2 to 5/8 inch, caliper	\$0 50	\$4 00	\$30 00	\$250 00
5/8 to 3/4 inch, caliper	60	5 00	40 00	350 00
3/4 to 1 inch, caliper	70	6 00	50 00	450 00
1 inch and up, caliper	80	7 00	60 00	550 00

Except Ascolano and Sevillano.

Chemlaly (New). There are several hundred thousand acres of these olives growing in Algiers on arid lands and the orchards are never irrigated. The trees are enormous bearers and remarkable growers. The olives are small and only adapted for oil purposes.

Lucques. Crescent-shape; good for oil and pickling. Middle of October.

***Manzanillo.** One of the standards for green and ripe pickles. Produces oil of a very high grade. Very hardy, and a regular and prolific bearer. First week in October.

***Mission.** Tree a handsome, upright grower, and fine for avenues. Medium to large; excellent pickles; makes a superior oil. Late October.

Nevadillo Blanco. Medium; deep black; rapid grower, and makes a pickle of superior flavor, but runs somewhat small in size. September.

***Obliza.** Large; borne in clusters on the stems. Excellent for pickles. Middle October.

Prices on Ascolano and Sevillano only:

	EACH	10	100	1000
1/2 to 5/8 inch, caliper	\$ 80	\$ 7 00	\$ 65 00	\$600 00
5/8 to 3/4 inch, caliper	90	8 00	75 00	700 00
3/4 to 1 inch, caliper	1 00	9 00	85 00	800 00
1 inch and up, caliper	1 25	11 00	100 00	950 00

***Ascolano.** Large; comes into bearing early; regarded very highly and is a superior pickling olive, but it does not color well; matures early; bruises easily, therefore not a very good olive for long distance shipment. The olive averages quite large in size, the tree is a strong grower, and a heavy bearer. When pickled the olive is of an excellent flavor. October.

***Sevillano.** This is the olive known to the trade as "The Queen." The olive attains a much larger size with us than it does in Spain, often weighing one ounce apiece. The tree is very ornamental, and when loaded with olives is a sight which is not often seen. As a green pickle much can be said in its favor, and in late years experienced picklers are now making quite a success in processing it when ripe. Early October.



A Three-Year-Old Mission Olive Tree, Making a Fine Uniform and Healthy Growth.



The Same Tree with Many of its Branches Thinned Out and the Laterals and Top Growth Properly Pruned to Develop an Ideal Tree.



A Well Developed Olive Tree.

Citrus Fruits

That citrus culture is one of the great and growing industries of California can no longer be questioned when it is borne in mind that the shipments amount to \$40,000,000.00 and over annually.

Citrus trees are either dug with a ball of earth varying in weight from 25 to 40 pounds, or they are taken up with naked roots. The former method is usually followed in handling trees in California. Freight charges on stock handled in this manner are heavy, still the satisfaction of knowing that with ordinary care every tree will grow, offsets the slight additional expense incurred in transportation charges. Trees taken up in this way can if necessary be kept in a shed for several months before planting, if the balls of earth are watered occasionally. In taking up trees with naked roots the greatest care should be exercised on the part of the orchardist to avoid exposure. When set, the leaves should be stripped off to retard evaporation and loss of sap in consequence. In planting set the trees so that when the soil is settled the union of the bud with the stock will be at least several inches above the ground.



A One-Year-Old Orange Tree.

A Tree Showing a Year's Development in the Orchard. Notice These Branches, Which, if Allowed to Grow Unchecked, Draw the Tree Out of Shape. All of the Growth Going into a Few Straggling Limbs.



The Same Tree Correctly Pruned to Form a Well Shaped Head.

Be sure to settle the earth around the trees with water, whether planted with naked roots or balled. In filling in the hole around a balled tree, never tramp on the top of the ball, as it will break it, dislodge the fibrous roots and in many instances cause it to die. After the hole, in which a balled tree is planted, is partially filled, cut the cords by which the burlap is tied to the tree; the burlap need not necessarily be removed as it will soon rot.

Seedling trees should be planted not closer than 30 feet on the square method; budded trees from 22 to 24 feet, with the exception of such varieties as Satsumas, Limes and Kumquats, which are of a dwarfish habit, and should be planted from 12 to 15 feet apart.

TIME TO PLANT

Citrus trees being evergreen they can be planted at all seasons of the year, although the months of March, April, May and June are considered the most favorable. In the interior valleys where it is extremely hot and dry during the summer months, it is advisable to plant as early as possible in the spring, although planting should not commence until the ground is fairly warm, so that the tree will immediately start to grow. Trees planted too early, while the ground is still cold and wet, will remain in a dormant condition until the ground gets sufficiently warm so that they can make a start. When this condition prevails for any length of time it causes the finer roots to decay; as a consequence of this, when the tree does start, it will make rather a slow growth until new rootlets are formed. For this reason it is advisable to defer planting until conditions are favorable for the tree to start to grow as soon as planted.

Along the coast where the summer climate is more moderate, citrus trees are planted with good results all through the spring and summer months. In fact, the trees planted during June and July seem to make nearly as good a growth as those planted in the spring. Where planting cannot be done before this time, it is our opinion that July or early August planting is preferable to waiting over until the following spring. Even though the trees do not make quite as vigorous a growth as those planted earlier in the season, they make sufficient growth to become thoroughly established, in consequence of which, they are all ready to start with the first touch of spring and are far ahead of any that can be planted at that time.

The only thing necessary to successful summer planting is to see that the trees are properly handled from the nursery to the orchard and are sufficiently well irrigated and cultivated. The prompt application of water to newly planted trees is very essential in late planting.

STOCKS

In order to meet soil and climatic conditions in different sections, we bud our citrus trees on the following stocks: Sweet Orange, (*Citrus Aurantium Dulcis*), Sour Orange, (*Citrus Aurantium Amara*), and Deciduous Orange (*Citrus Trifoliata*). On the first named sort the budded trees outgrow those on any other root, and practically all the old groves of the State are worked on this stock and are thrifty and healthy, except when situated on soils where there is an excess of moisture during certain seasons. Sweet orange seedlings are grown from the seed of the common sweet seedling orange. Sour Orange seedlings are grown from the seed of the sour orange so extensively grown in Florida as a seedling for budding practically all types of Citrus trees. Although the buds do not grow as rapidly or attain as large a size in mature trees, this stock is very resistant to gum disease, hence it has been much in demand in recent years for heavy soils where water was apt to stand for any length of time either because of summer irrigation or a heavy rainfall in the winter months. The Citrus Trifoliata is a native of Japan and is the hardest orange known. It is deciduous, its fruits are very bitter and of no commercial value, but its hardness seems to exercise a decided influence on the budded tree. It is more resistant to cold than any other stock.

Actual experiments have proven that trees grown on this stock come into bearing earlier, produce heavier crops when the trees are young, with no tendency to change in this respect as the trees attain age, and although the development of the tree is somewhat slower, it is indicated more by a close compact growth. That the trees do bear regularly and heavily; that they do mature their oranges earlier; and that the orchards are up to the standard of those grown on other roots, is shown by trees in full bearing which were grown by us. In most cases where the tendency of a stock is to dwarf the tree on which it is worked, the stock will be smaller than the body of the tree. With the Trifoliata root the very opposite is the case.

PRUNING

Our citrus trees are headed at about twenty-eight inches from the ground, hence all that is necessary for the planter to do is to shorten the branchlets to about six inches and to thin them out, not leaving more than six if they have a tendency to be overcrowded.

Trees headed at four feet or more should be cut back to 28 inches for the purpose of forming a new head. High headed trees are always objectionable, for they not only expose much of the stem causing sunburn, but in addition to this the tree is retarded in acquiring a sturdy compact growth. In pruning, above all things do not be deceived into the idea that the trees must be thinned out to admit air and sun. The tendency of nearly all the budded varieties is to droop, so in shaping the tree cut to a lateral which has an upward tendency.



Orange Tree Two Years Old, Rather One-Sided. An Irregular Development of Branches in the Orange Tree is to be Avoided; It Should Present a Compact, Well Defined Growth.

THE ORANGE

An orange tree for the first four years of its existence does not require thinning out as is the case with deciduous trees, but it does need systematic shortening in of the rampant growing branches which draw it out of shape. This cutting may be carried on in the summer months and then again in the spring just before the trees start to make their new growth. Although the principle of pruning the orange tree is the very opposite of that employed in shaping deciduous trees, we cannot too emphatically lay stress on the extreme importance of the free use of the pruning shears in the shaping of an orange tree. Unless lateral branches from the main body of the tree are actually interfering with each other, do not cut them out, but leave them alone to lend their aid, in forming a fine compact, well rounded head. It is no trouble to cut them out in later years when they cease to be fruitful. If you want to grow crops of oranges don't expect it by having all fruit on the outside of your tree. The natural tendency of an orange tree is to have its inside branches protected from the rays of the sun and every effort should be made to maintain this condition. During the formative period, any ambitious branches shooting skyward far beyond the others, should be cut off and forced to develop laterals which will gradually build the tree upwardly as well as outwardly.

A well pruned orange tree should present a compact mass of foliage with none of the branches exposed to view. Never neglect to protect the stems of young trees, for the first two years. Wrap with burlap paper or tules, but the best and most serviceable tree protector is one made of yucca fibre. This allows the free circulation of air around the stem of the tree. The protection of the stem prevents the development of suckers and obviates the danger from sunburn, while the top growth is stimulated.

In most localities during the summer months citrus trees must be irrigated every three or four weeks. In heavy adobe soils every precaution should be taken not to allow the water used in irrigating to touch the stem as it will cause gum disease.

THE LEMON

It is generally understood that the lemon will not stand as low a temperature as the orange, hence its planting for commercial purposes is restricted to localities where the temperature during the winter months does not go lower than 24° Fahrenheit above zero. The tree is a straggling grower and the branches must be held in check by systematic annual pruning, for left to itself the fruit will be on the ends of the long unrestrained branches. There are many systems of pruning but the fundamental principle is to produce compact but not too dense low headed trees with a large amount of bearing surface on easily accessible branches.



The Same Tree Pruned. Note that it was Cut Back Severely. Shortening in the Branches Having an Upward Tendency, will Cause the Tree to Round Out Uniformly.

When the tree is first planted the same directions as given for the orange should be observed, but in the subsequent prunings the method of procedure is quite different. Not more than four branches are selected to form the framework of the tree. These in turn are persistently cut back and encouraged to assume a nearly horizontal position. Any branches showing an inclination to make a strong growth in a vertical direction are cut down and forced to develop laterals. This continuous pruning back has a tendency to produce a dense mass of branches and foliage, and as the tree grows, some thinning out is necessary. The result obtained by following out this system of pruning is a shapely broadened out tree, liberally supplied with numerous fruiting laterals permitting the gathering of the greater part of the fruit without the use of long ladders.

THE GRAPEFRUIT

"Grapefruit," the name usually applied to this fruit, is really a misnomer, but it has become so customary to designate it as such, it is not likely that the proper name will be used again. The name undoubtedly arose from the fact of the fruit being borne in clusters of from three to fifteen fruits in a bunch. The Pomelo is really an improved Shaddock. The Shaddock, except for ornamental purpose, is of no practical value, for the fruits are extremely large, coarse, and are lacking in every essential necessary to make an edible fruit. The Pomelo is much sought after for its medicinal qualities, and as a healthful breakfast relish it excels every other fruit.

Its popularity is constantly increasing, and the demand for it far exceeds the supply. The most popular variety in California is the Marsh's Seedless. As the seeds of the Pomelo are very objectionable, any new varieties which are originated will not receive much recognition unless they are practically without seeds. The tree is fully as hardy as the orange, and the instructions for pruning the orange will answer admirably for the Pomelo. Trees should not be planted closer than twenty-four feet.

THE LIME

Valuable for its citric acid, which is extensively used in the concoction of summer drinks, and especially palatable as a lemonade. The juice is also used in medicine and in the arts. Its export from the West Indies constitutes an important branch of commerce, great quantities being exported to Europe and the United States. Fancy limes, and especially the newer seedless sorts, command good prices in the leading markets of the Western States, the average being from \$4 to \$6 per box. The tree is more tender than the orange, hence should be planted only in the sheltered foothill regions of the State. Commercial orchards should be planted from fifteen to twenty feet apart. It likes a moist soil, and in California a lime grove should be liberally irrigated. The tendency to form a dense bushy head should be encouraged by following somewhat more strenuously the instructions given for pruning the orange.

THE CITRON

The tree is even more tender than the lemon, and should therefore be planted where there is very little danger from damage by frost. The fruit is prepared for use by immersing in a brine for several months, and after washing it is placed in a hot syrup, remaining for three weeks. Later it is cooked with crystallized sugar dissolved in water, being cooked and cooled alternately until it has taken in sufficient sugar, when it is ready for the market.

The tree grows very much like the lemon, except that it is of more dwarfish habit. Best results are obtained by training the tree along the same lines as recommended for the lemon.

There is no variety of fruit trees grown that is so exacting in its demand for favorable soil and climatic conditions as citrus trees. Our nurseries at La Habra, Orange County, California, which are devoted to the growing of citrus and other tropical and semi-tropical fruits, are admirably situated for growing the very best of stock. Intensive cultivation and close attention to every detail must be exercised to grow the high-grade citrus trees which we supply to our customers. We grow trees on Sweet and Sour roots. We use the greatest care in the selection of buds from trees showing the best type and continuous bearing habits. You may also feel confident that our trees will grow and produce the maximum of large fruit if planted in proper soil and under favorable climatic conditions. Roeding citrus trees have made a great record for themselves with thousands of planters throughout the state.

In less than carload lots the freight rates on citrus trees have been greatly reduced over those prevailing a year or so ago, making quite a reduction to purchasers in transportation. Our charges for boxing and packing cover only cost of material.

Oranges—Prices and Varieties

On Sweet and Sour roots:	EACH	10	100	1000
$\frac{1}{2}$ to $\frac{3}{8}$ in., caliper...	\$0 90	\$ 8 00	\$ 60 00	\$500 00
$\frac{3}{8}$ to $\frac{1}{2}$ in., caliper...	1 00	9 00	70 00	600 00
$\frac{1}{2}$ to 1 in., caliper...	1 25	10 00	80 00	700 00
1 inch and up caliper.	1 50	12 50	90 00	800 00

Except Valencia Late.

Mediterranean Sweet. Large; pulp solid and few seeds; ripens late. February.

Navelencia (New). Ripens sixty days after Washington; equal to the very best. April to June.

Ruby Blood. Medium; very smooth; pulp red, rich, juicy and melting. January to April.

St. Michael. Small; round; firm; thin skin; pulp juicy and very sweet. February.

***Thomson Navel.** Medium size; very smooth and thin; pulp juicy. Earlier than Washington Navel. November to January.

***Washington Navel.** In California it has reached its highest stage of perfection, and stands in the lead of all other varieties for its large size, lusciousness and sweetness of pulp. The most extensively planted variety on the market. November to March.

***Valencia Late.** Large; reaching the market when all other varieties are gone. Second only to Washington Navel in the extent of its dissemination. The summer orange of California. Ripens from June to September.

	EACH	10	100	1000
$\frac{1}{2}$ to $\frac{3}{8}$ in., caliper..	\$1 10	\$10 00	\$ 90 00	\$ 800 00
$\frac{3}{8}$ to $\frac{1}{2}$ in., caliper..	1 25	11 00	100 00	900 00
$\frac{1}{2}$ to 1 in., caliper..	1 35	12 50	110 00	1000 00
1 in. and up.....	1 50	14 00	125 00	1150 00

Lemons—Prices and Varieties

On Sweet and Sour roots:	EACH	10	100	1000
$\frac{1}{2}$ to $\frac{3}{8}$ in., caliper...	\$0 90	\$ 8 00	\$ 60 00	\$500 00
$\frac{3}{8}$ to $\frac{1}{2}$ in., caliper...	1 00	9 00	70 00	600 00
$\frac{1}{2}$ to 1 in., caliper...	1 25	10 00	80 00	700 00
1 in. and up.....	1 50	12 50	90 00	800 00

***Eureka.** Medium size; sweet; smooth, glossy; abundant acid and very little rag. Popular on account of its heavy summer crop, maturing when Lemons are in greatest demand.

***Lisbon.** Medium size; sweet rind and strong acid; few seeds; an excellent keeper; fruit very uniform. Tree a strong grower, thorny, but thorns decrease as tree grows older. Very popular in the San Joaquin Valley. Very hardy and a prolific bearer.

***Villa Franca.** Oblong; rind thin, without any trace of bitterness; pulp acid, juicy, nearly seedless. A fine commercial variety.



Lemon Tree Just Transplanted from the Nursery to the Orchard with its Branches Shortened in as they Should Be. The Crown is Developed at about 28 Inches from the Ground. Citrus Trees Headed High Should be Cut Back to a Single Stem, for the Purpose of Starting the Framework Lower Down, an Important Point.

A One-Year Lemon Tree Properly Pruned for the Annual Production of a Good Crop of Fancy Fruit. Here is Shown the Importance of a Sturdy Frame Which Later On Will Carry Heavy Crops Without Props.



Grapefruit—Prices and Varieties

On Sweet and Sour roots:	EACH	10	100	1000
$\frac{1}{2}$ to $\frac{3}{8}$ in., caliper..	\$0 90	\$ 8 00	\$ 70 00	\$600 00
$\frac{3}{8}$ to $\frac{1}{2}$ in., caliper..	1 00	9 00	80 00	700 00
$\frac{1}{2}$ to 1 in., caliper..	1 25	10 00	90 00	800 00
1 in. and up.....	1 50	12 50	100 00	900 00

***Marsh's Seedless.** Medium to large; skin very smooth, glossy, lemon-yellow color; pulp juicy, with very little rag. The finest variety of Pomelo. The fruit will hang on the trees till late in September the following year. Our buds are taken from record performance trees of the highest standard type in the Geo. C. Roeding Co. orchard at Exeter, Tulare County. The fruit from this orchard is sold annually to the Palace Hotel, San Francisco and the unexcelled "Harvey System" on the Santa Fe.

Triumph. Medium size; peel smooth, clear, thin, and fine-grained; less "rag" than in most Grapefruit and fewer seeds; juicy and well flavored. No bitter in the juice, flesh nor membrane, and very little in the white inner lining of the peel. Tree bears young.

Special Varieties Citrus Fruits

- | | | | |
|-----------------|--------|---------|----------|
| | EACH | 10 | 100 |
| 3 to 4 ft. | \$1 50 | \$12 50 | \$100 00 |
- Citron of Commerce.** Large, weighing from 3 to 5 lbs; shaped like a lemon; skin bright yellow, smooth and very glossy. The tree is of a dwarf habit, with large, glossy leaves and very ornamental.
- *Bearss Seedless Lime.** Very large; seedless; very juicy; with pronounced acidity. One of the best in cultivation. Hardy, enormously productive, and matures fruit year round.
- Golden Nugget Navel Orange (New).** Oblong; good size; deliciously sweet; seedless. November to March.
- Joppa Orange.** Fruit large; red; nearly seedless; pulp very fine, sweet, juicy. April to July.
- Kumquat.** About the size of a large gooseberry; rind sweet, juicy, acid, delicious and refreshing. Tree dwarf and desirable for pot and garden culture. May to July.
- Mexican Lime.** Largely used in California for hedges; fruit large and excellent.
- New Seedless Lemon.** Buds sent to Mr. Roeding from Algiers, and has been fruiting with us for the past four years. Tree a vigorous grower and quite prolific; fruit about the size of the Eureka, but pear-shaped; thin-skinned and very juicy; absolutely seedless.
- Ponderosa Lemon.** An ornamental type of dwarf habit, adapted to small gardens. Fruit large and abundantly supplied with juice. Of no commercial value.
- *Satsuma (Unshiu; Oonshiu).** Deep yellow; flesh very tender, juicy. October to December.
- *Tangerine (Dancy's).** Medium size; very sweet; rind thin and separating readily. March.
- Willow-leaved Mandarin.** Skin thin; flesh dark orange-yellow, spicy and aromatic. Tree handsome. December to February.

New and Valuable Introductions in Citrus Fruits

- Lue Gim Gong Orange.** Originated at De Land, Fla. Believed to be a cross between Hart's Late and Mediterranean Sweet. Large; similar to Valencia in shape, a good keeper and a fine shipping fruit. Fruit known to hang on tree for two years. Quality good. Tree very hardy
- | | |
|-----------------|--------|
| | EACH |
| 3 to 4 ft. | \$2 50 |

Foster Grapefruit (Pink Flesh). Originated in the Atwood Grapefruit Grove near Orenco, Fla. The only grapefruit with rose-tinted flesh. Large, flesh tender and juicy; flavor mild.

- | | | |
|-----------------|--------|----|
| | EACH | 10 |
| 3 to 4 ft. | \$2 50 | |
- New Satsuma.** Buds of this were forwarded to us several years ago by Dr. Trabut, of the French Government Experiment Station, Algeria. The tree is not quite as vigorous as the ordinary Mandarin or Satsuma. It is more of a dwarfish habit and in addition to this is very striking on account of its willow-like foliage, making it a very handsome ornamental tree as well as being a heavy producer of most luscious oranges. The fruit is of the true Mandarin type with a few more seeds. The flavor is of the best and the fact that it ripens fully a month earlier, combined with the fact that it is exceedingly ornamental, as well as being very prolific, will make it a valuable acquisition for small gardens.

- | | | |
|-----------------|--------|---------|
| | EACH | 10 |
| 3 to 4 ft. | \$1 50 | \$12 50 |
- New Tangerine.** A vigorous, upright grower like the Dancy Tangerine. The fruit bears very close resemblance to the ordinary Tangerine, is almost seedless and ripens fully three months earlier. It gives promise of being one of the most valuable of our late introductions in the citrus line.

- | | | |
|-----------------|--------|---------|
| | EACH | 10 |
| 3 to 4 ft. | \$1 50 | \$12 50 |
- Rangoon Lime.** This is a very valuable Lime, unlike any known to the trade. The fruit has the appearance of a Tangerine, with the same loose skin, but with an intense acid and valuable for the uses that limes or lemons are put to. The tree is a very prolific bearer and a novelty of great value.

Specimen Citrus Trees

Orange, Lemon, Pomelo

To meet a growing demand for citrus trees for indoor, conservatory and lawn purposes, we offer a magnificent stock of established trees properly trained for immediate effects. Not only are they objects of beauty, with their rich, luxuriant foliage and symmetrical growth, but they possess an additional value on account of their early fruiting qualities. We can supply these extra fine trees at the following prices:

Dia.	Caliper	Crown	EACH
14 in.	1 in. and up	18 in. to 24 in.	\$ 8 00
16 in.	1 in. and up	24 in. to 30 in.	10 00
16 in.	1 in. and up	30 in. to 36 in.	15 00
18 in.	1 in. and up	36 in. to 48 in.	20 00
20 in.	1 in. and up	36 in. to 48 in.	22 50



Specimen Citrus Tree in Tub.



A Well Pruned Persimmon Tree. See Page 39.

Miscellaneous Fruits

THE PERSIMMON

In this country there are but two varieties in cultivation, viz., the American and Japanese. The latter, on account of their attractive appearance and large size, are destined to be extensively planted as soon as their commercial importance is more appreciated. The impression that the fruits must be on the verge of decay before they can be eaten has militated against their sale. There is much variation in the character of the fruit. Some varieties are not astringent at all and are edible in early autumn, while still hard and green. Several kinds never soften at all until they decay; others are edible only when fully ripe and soft; still others lose their astringency only after they have been dried, and some so abound in tannin that their juice, when expressed, makes a valuable varnish for preservation of all kinds of woodwork. There is quite a distinction between the dark and light fleshed varieties. The former invariably contain seeds, are crisp and meaty, and are edible before they soften, although their flavor is improved considerably when they reach this stage; the light fleshed kinds are seedless (or mostly so), and cannot be eaten until they soften.

Persimmon culture commercially centers in Japan.

California offers great possibilities in the culture of this most delicious fruit. It will adapt itself to a wide range of localities. The fruits will very often hang on until January, providing there have been no heavy frosts and a tree loaded with this deep russet golden fruit is a sight to behold when all the leaves are off.

There is an endless number of varieties, Japan holding the lead in this respect, and China being a close second. Through the very thorough and able efforts of the Division of Seed and Plant Introduction of the United States Department of Agriculture, it is hoped within the next few years that the almost hopeless confusion which seems to surround the nomenclature of the Persimmon will be solved. It is of the utmost importance that nurserymen should grow their trees exclusively in this state, not only because of the difficulty of getting the imported trees to grow, as well as their unreliability.

PLANTING AND PRUNING

Trees should be planted 24 feet apart. The Persimmon has a rather decided tap root with numerous small fibrous roots. The tap root should be cut back to 18 inches and fresh cuts made on all the fibrous roots. After the trees are set, head back to 18 inches. The first winter thin out the branches not leaving more than four to form the head of the tree. Cut these back at least one-half. In the second, third and fourth years the pruning of the tree should be continued to fashion the tree into the typical goblet form. A better quality of fruit and running into large sizes with a more regular distribution of fruit over the entire tree will be effected by pruning every year. The trees are quite hardy and fruit freely in all sections of the Coast and in the Southern States, and as far north as Washington, D. C. Persimmons do not bloom until the middle of May. Therefore, under average normal conditions the trees always bear fruit.

The astringency is readily removed by placing the fruit in Japanese tubs, from which Saki (Rice-beer) has been recently withdrawn. After the persimmons are placed in the tub, close carefully to exclude the air. In ten days the fruit, although perfectly firm, will have lost all its bitterness.

A new simple process of alcohol inoculation is lately practiced. Pierce the fruit at the bottom several times with a common needle dipped in alcohol and pack them in a tight box or container lined with straw and layers between the rows, keep the box closed for 10 days.

It is not generally known that the Persimmon is delicious when dried. It is so sweet, so rich in sugar and has such a unique flavor that one who has never eaten the dried persimmon before, immediately comes to the conclusion that the fruits have been crystallized. The method of drying is simple; skin is pared off and the fruits are suspended by the stems on a stick and exposed to the sun when they gradually lose their original form—turning quite dark and covered with sugar crystals. The dried persimmon is considered by many to be more delicious than the "Date of Commerce". Fruit should be picked for drying when yellow and firm.

Grafted Persimmons

Home Grown:	EACH	10	100
2 to 3 ft.....	\$0 40	\$3 50	\$30 00
3 to 4 ft.....	50	4 00	35 00
4 to 5 ft.....	60	5 00	40 00
Imported:	EACH	10	100
2 to 3 ft.....	\$0 30	\$2 50	\$20 00
3 to 4 ft.....	40	3 00	25 00
4 to 5 ft.....	50	4 00	30 00

Tane—Nashi
Persimmon —
Large, Quality
Excellent.

Dai-Dai-Maru. Fruit very large, round, somewhat flattened, color light yellow, flesh delicious, firm, juicy, very good; seeds generally absent.

Delicious. A variety of late introduction. Fruit large, juicy and sweet and all its name implies.

Fuyugaki. Medium large; color deep orange red; fine flavor and quality. October

***Hachiya.** Fruit very large, oblong, conical pointed toward the apex; skin bright red with occasional dark spots or blotches, flesh deep yellow, soft and jelly-like when ripe, seeds usually absent; a valuable variety, considered to be one of the best. Dried quite extensively in its native home, Japan. One of the earliest. October

***Hyakume.** The name means "Hundred Momme," a weight equal to four-fifths of a pound and referring to its size; fruit very large, slightly oblate; skin orange yellow; flesh rusty brown, with many purple or dark spots, and but few seeds; ripens early, and not astringent even when hard. October.

Mammoth Goshu. Very large; round; somewhat flattened. Specimens average 10 ounces. Flesh red. Tree erect grower. September.

Sato. A medium sized fruit; good flavor.

***Tane-Nashi.** Exceedingly large, broadly oblong, pointed; skin light yellow, changing to bright red at full maturity; flesh yellow, seedless; quality very fine; must be fully ripened before eating; tree a vigorous grower, a prolific bearer. A valuable market variety, and on account of its size, and earliness one of the best for drying. Middle of September.

Twentieth Century. One of the best, if not the best of recent introductions. Fruit large, flat, sweet and juicy. October.

Yami-Yemon. Very similar to Yemon except the fruits are very much larger maturing in October. Fully a month before Yemon. Has few seeds; flesh yellow spotted with purplish black dots; flavor excellent even when quite hard; can be eaten like an apple. New; will soon prove a standard variety.

***Yemon.** Fruit is large, oblate, tomato shaped, more or less square in outline, folded at apex; skin light yellow, changing to dull red; flesh deep yellow, seedless or nearly so, like all seedless yellow fleshed varieties cannot be eaten until soft. November.

Persimmon Seedlings

American. Fruit medium to small, cannot be eaten except when frosted, well known in the Southern and Eastern States.

Japanese. Grown from seed therefore cannot guarantee the fruit.



POMEGRANATES

The natural habit of the pomegranate is to grow bushy and it bears indifferently if pruned heavily.

Growers of pomegranates are finding an increased demand for the fruit and there seems to be much encouragement for the planting of a considerable acreage at this time.

A cooling acescent drink known as grenadine is made from the pulpy seeds. It is served throughout the country at the large soda fountains where it is gaining in popularity. It is especially cooling in fevers. The juice or extract brings a higher price than any other flavor. The fruit sells for good price in Eastern markets.

	EACH	10	100
2 to 3 ft.	\$0 40	\$3 00	\$25 00
3 to 4 ft.	50	4 00	30 00
4 to 5 ft.	60	5 00	40 00

Paper-Shell. Very large; skin thin; pale yellow, with crimson cheek.

***Sweet-fruited.** Fruit large, with sweet, juicy pulp; ripens in September.

***Wonderful.** The largest and most attractive. Valuable for shipment. Ripens early. Pulp a rich garnet color, with an abundance of juice, dark as port wine; exquisite flavor. October.

AVOCADO—Alligator Pear

A tropical or subtropical pear-shaped or spherical fruit, of great food value, which will undoubtedly become one of the leading commercial fruits of California, as all who have tested it so far are enthusiastic in its praise as an income producer.

Recent experiments have demonstrated that this highly nutritious, nutty flavored fruit may be grown wherever the Orange thrives but commercially they should not be planted where the temperature goes below 28 degrees Fahrenheit.

Where conditions will permit no one should neglect to plant one or more trees of this delicious fruit.

At Santa Barbara and in similar situations in Southern California and other warm sections, the Avocado is being planted commercially and soon our markets should be well supplied with fruit. Our trees are grown in our La Habra (Orange County) Nurseries, where climatic conditions are very favorable for producing thrifty dependable trees.

Budded Varieties

	EACH	10
Boxed.....2 to 3 ft.	\$2 50	\$20 00
Boxed.....3 to 4 ft.	3 00	25 00
Boxed.....4 to 6 ft.	3 50	30 00

Except Special Sorts.

Harman. An extra hardy pear-shaped, thin-skinned variety, ripening in early winter, having a smooth, rich, nutty flavor. Tree an upright, uniform grower, bearing purple fruits weighing slightly over one-half pound.

Meserve. A round, slightly pear-shaped, thick-skinned variety of greenish color, weighing about one pound, with a tight seed, which, together with its rich, buttery flavor, makes it one of the best for commercial planting. Ripens April to June.

Northrop. Purple, thin-skinned, medium size; pear-shaped; rich flavor. Tree very hardy and vigorous. Yields two crops a year. September to November.

Taft. A pyriform green thick-skinned variety weighing about a pound and ripening in midsummer, with a fine velvety rich flavor. Tree a good, uniform grower, very ornamental.

SPECIAL SORTS

Azusa. Originated near Azusa, California. Tree vigorous, hardy and productive. Fruit elongated, pear-shaped, measuring about 4½ inches in length and weighing 6 to 8 oz. Color purplish black with cream-yellow flesh of rich nutty flavor. Blooms in January and ripens its fruit in November and December.

Challenge.—A good grower and parent tree very prolific, having borne 2,000 fruits in one season. Thick skinned, 1 to 1½ pounds, purplish, nearly round. Ripens early. February to May.

Lyon. Fruit large, pear shaped. Surface rough. Rich green color, skin moderately thick. Flesh cream-colored, free from fiber, flavor rich and nutty. Very precocious—some trees bearing in second year. Heavy bearer, recognized by many as the leading Avocado.

Sharpless. A most promising variety. Fruit large, pear-shaped. Quality is of the best. Seed small. Possesses all the good qualities of an ideal avocado.

	EACH	10
Boxed, 3 to 4 ft.	\$5 00	\$40 00

Seedlings

	EACH	10
Balled.....3 to 4 ft.	\$0 75	\$6 00
Balled.....4 to 6 ft.	1 00	7 50

CHERIMOYER (Anona cherimolia)

Custard Apple

Produces fruit in great abundance, the flesh of which has the consistency of ice cream, with a custard flavoring. Will not stand much cold.

Potted.....EACH \$0 50

ELAEAGNUS LONGIPES

Bears an abundance of oval-shaped fruits of deep orange-red, which make an excellent jelly.

	EACH	10
3 to 4 ft.	\$0 60	
4 to 6 ft.	75	

FEIJOA SELLOWIANA

Fruit 2½ inches long by 2 inches across. Flesh thick, white, pulpy and watery, with a sugary taste resembling the pineapple and guava, and with a strong, agreeable odor. Very hardy.

	EACH	10
2 to 3 ft.	\$1 00	\$7 50
3 to 4 ft.	1 50	10 00
4 to 6 ft.	2 00	15 00

GUAVAS

More of a shrub than a tree. Very ornamental on account of their glossy foliage, abundant flowers and showy edible fruit. All varieties are tender and will not thrive in localities where it becomes very cold in the winter months.

	EACH	10
Pot-grown.....2 to 3 ft.	\$0 50	\$4 00

***Pear or Lemon Guava.** Grows to be a large shrub. Should be planted only in favored localities, as it is tender; fruit pear-shaped, yellowish; prized for jellies and jams.

***Strawberry Guava.** Shrub or small tree, producing fruit of a fine deep claret color, with strawberry-like flavor.

Yellow Strawberry. Large and finer flavored than the common strawberry guava otherwise very similar.

HOVENIA DULCIS

A small, round-headed tree, with handsome shining foliage and small, greenish flowers, succeeded by small, sweet, aromatic fruits with reddish flesh.

	EACH	10
2 to 3 ft.	\$1 00	\$8 00
3 to 4 ft.	1 50	10 00
4 to 6 ft.	2 00	15 00



Avocado—A Highly Nutritious Fruit Now Fruiting in Many Sections of California.

LOQUAT

A beautiful evergreen shrub or tree attaining a height of 15 to 20 feet, bearing pear-shaped fruit of a pleasant acidulous flavor and of lemon-yellow color.

The large budded varieties listed below are far superior to the seedlings usually grown. The loquat is used quite extensively for making jellies, jams and preserves. Trees are easily grown and may be planted 20 to 24 feet apart.

Budded Varieties

	EACH
3 to 4 ft.	\$1 50
4 to 6 ft.	2 00
* Advance. Very large; deep lemon-yellow; flesh firm, juicy, sweet. One of the best.	
* Champagne. A large mid-season variety similar to Advance; bunches large and fruit sufficiently far apart in clusters to permit full development.	
Early Red. Earliest variety grown; highly recommended for Southern California planting.	
* Premier. Fruit large; lemon-yellow; flesh melting, juicy and sweet; seeds small.	

Seedlings

	EACH	10
Pot-grown.....2 to 3 ft.	\$0 75	\$6 00
Balled.....3 to 4 ft.	1 00	7 50
Balled.....4 to 6 ft.	1 50	12 50
Balled.....6 to 8 ft.	2 00	15 00

BANANA

Leaves often 2 feet wide and 8 feet long make it a fine plant for decorative purposes. Avoid planting in locations where the thermometer goes below 32° Fahrenheit.

There are few locations where this plant can be grown outside, and our seasons will not permit the maturing of fruit.

	EACH
In pots.....2 to 3 ft.	\$2 00
In 12 in. Boxes.....4 to 5 ft.	4 00

Cavendishii. Dwarf in habit; fruit yellow; small; in immense bunches.

Orientum or **Hart's Choice.** Clear yellow, with unsurpassed fruity flavor.

Sapientum or **Orinoco.** Rapid and robust; large, dark green leaves; fruit large.

JUJUBE (Chinese Date Plum)

Beautiful ornamental tree, with bright, glossy green, locust-like foliage.

Quite an important fruit in China. Tree hardy and will stand much neglect; may be planted where there is considerable alkali. Fruit similar in appearance to the Persian date, especially when dried. Very rich and delicious flavor when cured. Deserves to become well known in California. Ripens in October.

	EACH
1 to 1½ ft.	\$0 60
3 to 4 ft.	1 25
4 to 6 ft.	1 50

CAROB TREE (Ceretonia siliqua)

The saccharine seed-pods are of value as food for horses, cattle and hogs. A fine tree for dry situations, doing exceptionally well in the southern part of this State, near the coast, particularly near the sea where it will thrive in the rocks. While in Southern Europe Mr. Roeding saw the Carob growing at the water's edge on the very rockiest soils along the Mediterranean Sea. A fine avenue tree.

	EACH	10
In pots.....1½ to 2 ft.	\$0 50	\$ 4 00
Boxed.....2 to 3 ft.	1 00	7 50
Boxed.....3 to 4 ft.	1 25	10 00

THE GRAPE

Even in Europe there is a charm in the name "California." This should occasion no surprise, for within the confines of this State there is not a single variety of fruit bearing tree, plant or shrub that cannot be grown to greater advantage here than in its nativity, where their culture has extended into centuries. The grape is no exception to the rule. It is in Fresno County where the grape industry centers, but it is rapidly expanding and wherever irrigation is practiced in either the San Joaquin or Sacramento Valleys, there is sure to be a corresponding development of this industry.

LAYING OUT A VINEYARD

First establish your base lines. It is best to have this done with a transit, particularly if there are no established regular subdivision lines to work from. If the base lines are not at right angles, the rows will not be straight, and nothing is more unsightly. The difficulty of plowing and cultivating, and the advantages of straight rows will be readily understood. For planting, use a steel woven No. 19 galvanized wire, dividing same up into sections as recommended under the heading "Methods of Planting," and at equidistant points on the chain a piece of wire is wrapped to which markers are attached and soldered into place. It is necessary, of course, to change the markers to other points for planting at greater or less distances. It is best to have the wire chain the width of the check, the last link coming flush with the stake indicating the roadway. These roads should be at intervals of twenty-four rows for a wine and table vineyard and thirty rows for a raisin vineyard. Start at one corner of the field with the chain, which should have three-inch rings at each end for inserting the iron stakes. These should be made of one-half by two-inch iron, two and one-half feet long and drawn down to a point at one end. The stakes which are to be used as markers may be split out of redwood, or any other



One-Year-Old Muscat Trained to Single Cane Cut Back to 24 Inches.



A Two-Year-Old Muscat Vine with Spurs Properly Distributed Along Cane.



A Three-Year-Old Muscat Vine Well Trained.

material for that matter, and at least six inches of one end dipped into a bucket of whitewash, so that the line of the base rows may be readily seen.

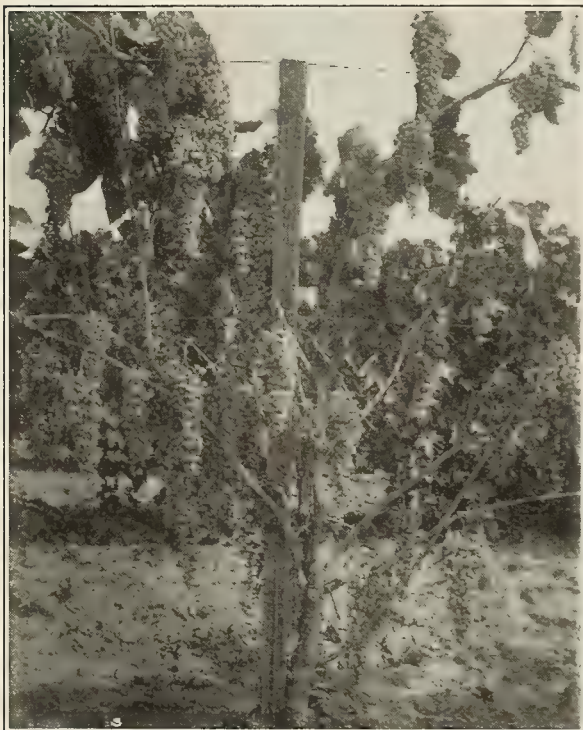
Having set the stakes along the outside line at the distance apart the vines are to be planted, start at the same end of the field again and set another line of stakes parallel with the first line and the length of the chain distant from the outside line. Proceed in this manner until the entire field is laid out in checks. With this preliminary work done, and having exercised care in the measurements to have the base lines parallel and the stakes in each block opposite each other, no difficulty will be experienced when planting commences to have the vines line up.

DISTANCE TO PLANT

This always gives rise to much discussion, and opinions vary so that the planter is often in a quandary as to what course to pursue. The prevailing practice is to plant wine grapes 8x8 feet, leaving out the twenty-fifth row for an avenue. For wine and table grapes the avenues should not be farther apart than this. As it is necessary to carry out the grapes in lug-boxes to the avenue, the pickers (if the work of harvesting is done by contract) demand more per ton for the picking than where the checks are twenty-four vines wide. For types of raisin grapes which are to be short pruned and headed low where the drying is to be done on trays in the vineyard, any of the following distances are satisfactory: 8x8, 7x10, 6x12 feet, always leaving the wide rows east and west, so the trays shall get the full benefit of the sun's rays. In this case the checks may be thirty rows wide. For staked vines of raisin grapes,



Three-Year-Old Thompson Seedless Vines Pruned and Unpruned—Trellised.



One of the Same Vines Following Season, Loaded With Fruit Showing the Results Obtained by the Single Cane Method of Pruning.

where the drying is to be carried on in the vineyard, 6x12 feet is undoubtedly the most economical distance to plant, as picking is much facilitated, the trays get the full benefit of the sun, and the raisins cure quickly, which is not the case where vines are closer together. Table grapes should not be planted closer than 8x10 feet, with the wide rows north and south. The grapes then have more exposure to the sun and mature more uniformly. This rule applies more particularly to the varieties which ripen rather late, like Cornichon, Emperor, Gros Colman, Black Morocco, etc.

PREPARING FOR PLANTING

All rootlets, excepting those starting from the base of the vines, should be cut off. Next shorten in all the roots radiating from the base of the cutting from two to three inches.

Then prune the top of the vine, leaving only one spur with from one to three buds. The vines should be pruned a day or so in advance of the planting, and the work should be entrusted to careful men. As soon as pruned, the vines should be heeled in and the soil either wet or tamped down to prevent the roots from drying out. The heeling-in ground should be centrally located, so that it will not be necessary to carry the vines too long a distance to the planters.

HOW TO PLANT

Each man should be provided with a bucket or five-gallon coal-oil can. A small quantity of water in the bottom will keep the roots moist. Each bucket should be filled with vines, and replenished from time to time with vines as they are needed by the planters.

The planting wire should be stretched across the first check to two stakes which should be directly opposite to each other. Each planter should have charge of two marks on the wire. As an illustration, figure on a basis of planting the vines eight feet apart each way and leaving out every thirty-first vine for an avenue. It would be necessary to have a wire chain 250 feet long over all, including a two-foot link at each end for the ring and to permit drawing the chain taut. To such a chain it would be necessary to have seventeen men, two to stretch the chain across the field between the two stakes set opposite each other in the check and fifteen to do the planting. The marks eight feet apart in the chain indicate where the vines are to be set. In planting, the vine should be set so that the collar will be level with the top of the ground when it is settled, except with grafted vines, which will be referred to later. The soil in the bottom of the hole should be loosened up, and that used to fill in should be top soil, the first few shovels of which should be well tramped in, the top being left loose. Having set this line of vines the chain is carried to the next two line stakes, and so on until the check is planted. Within two weeks after planting the earth should be settled around the vines either by hauling water to them or by irrigating, running the water in furrows along each row. This is important, for even with a good field boss over a crew of men, some of them will be careless, fail to tramp the soil around the roots, and unless a timely and heavy rain should cause the soil to settle, the vines will dry out and die.

CARE AND PRUNING THE VINE

Specific rules for cultivation and irrigation cannot be laid down, for this work is dependent on soil conditions, water, rainfall, etc. It goes without saying that thorough cultivation and careful attention to keep the vines in an active state of growth during the growing season will be amply repaid when the vineyard reaches its bearing age.

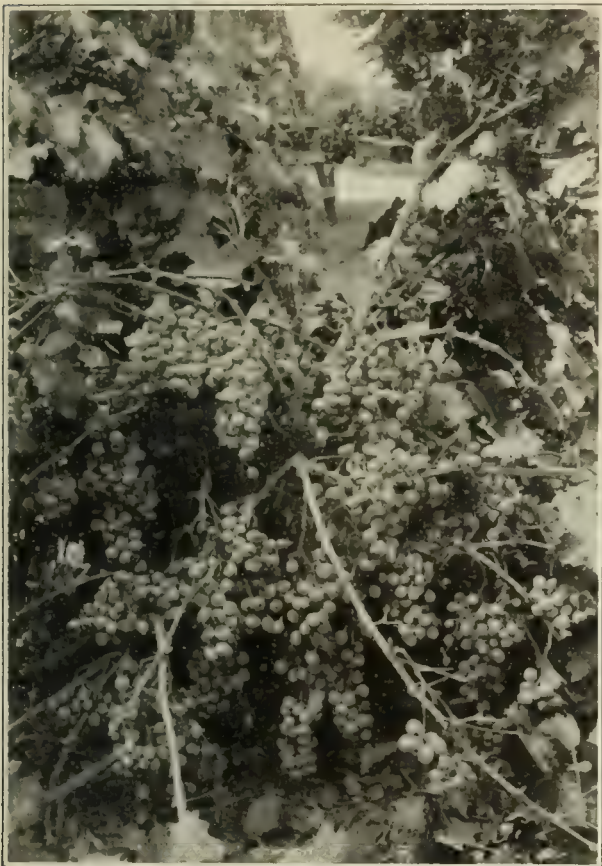
The training of the vine should be given careful attention the first year of its growth. In order that the plant may not form a head close to the top of the ground a short stake allowing it to be a foot above the ground should be driven beside each vine. These stakes should be one inch square and two feet long, as they should be taken out the first winter. Any cheap stake, provided it will support the growth of the vine, will answer. In July, before the growth of the canes has become lignified, they should be tied with three or four ply baling rope to the stake, and about one-third of the top growth cut off. This shortening in of the canes causes them to become stocky, and as a result of the tying up there are a number of straight shoots, the strongest of which may be selected the following winter, the others being removed.

The most serviceable permanent stakes are the split stakes made out of coast redwood. These stakes should at least be 2x2 inches. Their length will depend largely on the variety of Grape to be trained to the stake. For Muscat vines and other vines which do not make long canes a 3 foot stake will answer. For Malaga and stronger growing vines in its class use a 4 foot stake and for Emperor, Flame Tokay, Cornichon, Sultana, and Thompson Seedless the stake should at least be 6 feet long.

In making my recommendations in reference to pruning I am going to discuss varieties on a basis of "Standards." In other words, a Muscat and vines in its class, making short canes will be referred to as low standards, meaning that the height of the cane would not exceed 24 inches. The Malaga should be termed as a medium standard, cane not to exceed 32 inches, and the Thompson Seedless high standard, cane not to be longer than 42 inches.

No difficulty will be encountered under ordinary conditions in securing a low standard cane the first year, provided the growth of the vine has been tied up as directed. If the cane shows by its size that it is not strong enough to be carried to its maximum height in the first winter pruning, it should be cut off to a point where it is sturdy and during the growing season the strongest cane from it should be selected and firmly tied to the stake. In tying to stake use nothing smaller than a 3 ply baling rope. Anything smaller than this, should the cane

grow vigorously, cut it in two. On low and medium standards rub all the laterals off, starting not closer than ten inches from the surface of the ground, and on the others anything below fourteen inches should be rubbed off. It is of the utmost importance to have the stem of the vine tied firmly to the stake to have it as straight as possible for it will ultimately form the body of the vine. In the second winter when pruning the low standard, leave at least four spurs, getting them as evenly distributed as possible, and be sure to have one at the tip end of the vine. The medium standard should have at least six and the high vine not less than eight. None of these spurs should exceed five inches in length. A light crop of grapes may be expected from the vines in the second year, by this method of handling. In the third winter each one of these spurs will have several canes and in the case of the low and medium standard vines which ordinarily would not be trellised, two spurs with not more than three eyes in each should be allowed to remain. In succeeding years these eyes from the original stock may be increased, depending on the growth of the vine. In the third year the trellising of high standard should commence, when this is done one cane and one short spur with three eyes or buds should be allowed to grow from the stock of the preceding year. The object of this is to furnish wood for renewing the cane in the fourth year, for the first one will be cut off close to the original stock. This method permits of the renewal of the bearing wood of the vine annually and promotes its vigor. There are several advantages in this method of pruning: One is, that the vines eventually become self-supporting, making an immense saving in stakes, when after a number of years they must be renewed. There is a tendency on the part of all vines, as they grow old to have large spurs die. When the vines are trimmed to a head—say 12 inches from the ground, it very frequently happens that decay sets in, where the heavy saw cuts are made in removing the old spurs and the vine either dies prematurely or there is such a slow renewal of new wood that it becomes unprofitable.



Note the Splendid Crop of Muscat Grapes and Their Distribution on this Three-Year-Old Vine Pruned Along the Lines Recommended.

For trellising, use a 12 gauge wire and either staple it to the stakes, using a medium sized staple, or bore holes through the stakes and pass the wire through. To prevent the wires from becoming slack the end stakes in each row are braced, the braces being of sufficient length to reach from the top of the inside stake to the base of the stake on the next row. At three years old a trellised vine should not have more than four canes. This may in later years be increased, but eight should be the outside limit.

A great saving can be made in tying up vines or canes for that matter to the stakes by stripping off the leaves from the California Fan Palm and using these strips in place of rope. These palm leaf stakes are not only very strong but are also very durable. The leaves should be cut two weeks in advance of using and exposed to the weather to cure before tearing them into strips.

In trellising, the cultivation of the vineyard is somewhat more expensive, as it only permits working the rows one way so that the center between the rows must be worked out with a horse hoe. It has been found that by trellising, the harvesting of the crop is facilitated, the bunches are more evenly distributed, the vines produce larger crops and in addition to this there seems to be less danger from damage by early Spring frosts.

RESISTANT VINES

The ravages of the phylloxera in the grape regions of France and the practical extermination of the French vineyards through this dreaded pest are too well known to require repetition here. Today France is producing more wine than she did in her palmiest days, prior to the time this pest was introduced. This wonderful change has been brought about by the grafting of the table, raisin and wine varieties, all of which are natives of Europe belonging to the *Vitis Vinifera* class, and none of which, no matter how strong they are, but will finally perish when attacked by the phylloxera.



A Two-Year-Old Emperor Vine Showing Distribution of Spurs.



An Eight-Year-Old Emperor Vine with Spurs Well Distributed Along the Cane.

The resistant sorts were originally wild American grapes, natives of the Mississippi Valley. These were taken in hand by the French viticulturists, improved by hybridization and selection, until today a large number of sorts adapted to a variety of soils and locations have come into general use.

The destruction of vinifera vines is due to the roots rotting whenever the insect makes a puncture, causing the vine to perish in time. In the roots of the resistant, although subject to these attacks, the punctures do not extend deeper than the bark of the rootlets, and as this is sloughed off each year, the roots are left as healthy as before. The grapes of the resistant are worthless; they simply serve as a stock for the more valuable foreign varieties of wine, table and raisin grapes, all of which succumb to the attacks of the phylloxera on their own roots. The cultural directions already given for planting vines on their own roots may be applied to the resistant in so far as preparing the vines for planting. In planting the rootings, the vines should be set so the union of the stock is at least an inch above ground. As soon as the vine is planted, cover it with soil, leaving only the top bud exposed. When the vines have a good strong growth, clear the soil away from them and cut off any roots which may be started from the scion. This is one of the important points in bringing a resistant vineyard into bearing for if these roots are not cut off the resistant roots dwindle away and the vine reverts back to its own root. Suckers starting from the resistant cutting should also be removed.

It is necessary to follow up this root pruning for at least five years after the vineyard is planted, for the scion will invariably start out new roots if the soil from plowing gets banked up against it. In later years, after the wood of the vine becomes well hardened up, there is very little danger of the scion making roots. The same recommendations for training and pruning vines on their own roots may be followed with grafted vines.

Our stock of vines is very complete and are grown on new land, causing them to have a fine, vigorous root system.

Located in the heart of the grape-growing section of California, our nurseries have produced millions of the vines now bearing the enormous tonnage of grapes harvested each year. We shall continue to grow and sell the high quality, fine rooted vines, for which we have established a reputation in the past. Place your orders early and have stock reserved, and depend upon us to do our part in sending Roeding quality vines.

The vines will be supplied as follows: 500 at the 1,000 rate, where this rate is quoted, in not less than 50 of any one variety; 50 at the 100 rate, in not less than 10 of a variety. In small lots of one or two of a kind, the 10 rate will apply, except in quantities of less than five vines, when the single rate will be charged.

Grapes—Prices and Varieties

Foreign Table Grapes of Very Recent Introduction

	EACH	10	100
Price.....	\$0 50	\$4 00	\$30 00

A few years ago we introduced a number of new varieties of grapes from France. It is only recently that we have observed these varieties sufficiently to feel at liberty to offer them for sale. They have been carefully tested in our trial grounds and their value has been fully determined. Our descriptions and recommendations are made from actual observation for several years.

Angulato. A very handsome grape, bluish black, large size, oval. Bunch large, closely set; flesh firm, juicy, sweet and crackling. A good table and market sort. Aug.

Assouad Zeine. A fine, showy grape of excellent quality. Bunches loose; berries large and elongated; color dark red. One of the best of the new introductions. Aug.

Black Monukka. A black seedless grape, similar in size and quality to the well-known Thompson Seedless but $\frac{1}{2}$ larger, very firm, excellent shipping grape. Bunches loose; berries deep black and of even size. Extra fine quality. Introduced from India. Aug.

Buckland Sweetwater. A splendid English variety, exclusively grown for table use; bunch medium, compact; berries medium juicy; fine yellow skin when ripe. Aug.

Damas Rose. (Grafted.) This is one of the finest of table grapes. Bunch large, rather compact; berries immense, an inch and over in diameter. When fully matured, deep coppery red in color. For home use this is a very superior grape and we can recommend it highly. Sept.

Dronkane. As a late shipping grape this sort has qualities which will cause it to be in great demand in the interior valleys. Bunches are very large, berries are oval-shaped, compactly set on the clusters. Berries of a metallic red, very firm and highly flavored. Nov.

Gradiska. For home use this is a desirable variety. The bunches are large, heavily shouldered; berries large, greenish white and of excellent flavor. A fine trellis grape and a valuable dessert fruit. Sept.

***Gros Guillaume.** Among the grapes of recent introduction this of the black type is the show fruit of them all. Bunches are of medium size, but berries are as large as Damson Plums, with a coloring when used for table decoration that makes them look as if molded in wax. Flavor the very best. Ripe in early September, but keep well until the middle of October. Enormous producers. Vines should be cane-pruned. Suitable for trellising.

***Joannenc or Lignan.** Ripe with us July 1. Much earlier and a far better grape than the White Sweetwater. Bunch medium; berries compact, medium; flesh sweet and juicy; golden yellow when ripe.

Maraville de Malaga. It is no exaggeration to say that this Grape with its remarkable coloring of deep red intermingled with blue, as it reaches maturity, with its firmness, unusual delicious flavor, excellent keeping qualities, will always command a position which will be accorded to comparatively few of the late Grapes. Bunches long and loose, berries large conical, oval. October.

GRAPES—Continued page 45.



Olivette Blanche—New Late Grape. See page 45.



The Zante Currant Grape—Known as the Currant of Commerce—Great Western Vineyard, Fresno Co. See Page 46.

GRAFES—Continued.

•**Ohanes d'Almeria.** Bunch above average. Berries are a beautiful golden color; fine flavor; good shipper. This variety is imported from Spain in cork dust. Nov.

•**Olivette Blanche.** As this variety does not ripen until October, it is adapted only to warm climates. The grape is large, fully 2 inches long, never too close; berries long, olive-shaped, greenish amber, slightly brown on side exposed to sun; crisp, firm, with a neutral flavor. Vine very abundantly furnished with foliage and not only produces heavily, but is a vigorous grower. As a market grape and for trellising it is sure to take a prominent place.

•**Olivette de Vendemian.** This grape bears a very close resemblance to the Almeria so extensively exported from Spain, packed in cork dust, with several important exceptions. Vine stronger grower; bunches and berries larger. In every way a better grape and somewhat earlier in ripening. October.

Roeding's Improved Thompson Seedless. This is a sport of the well-known Thompson Seedless. Berries are twice as large. The vine is a very strong grower, but the canes are heavier and more closely jointed. The leaves are identical with the parent with the exception that they have much heavier texture. We have propagated this variety for several years and know it comes true to the type. It is worthy of a trial and we can recommend it particularly as an arbor grape. Ripens earlier than Thompson Seedless but so far does not bear as heavy; Equally as good. Watery.

General Collection**Foreign Grapes****For Table and Shipping**

	EACH	10	100	1000
Price.....	\$0 15	\$1 00	\$4 00	\$25 00

Except Dattier de Beyrouth.

•**Black Cornichon (Red Cornichon.)** Bunches long, berries long; skin thick and dark; flesh firm, good flavor; good shipper. Oct.

•**Black Ferrera.** Large, black with violet bloom. Flesh sweet. Valuable for shipping. Late Sept.

•**Black Hamburg (Frankenthal.)** Large; round; coal-black; flesh sweet and juicy. The famous English table grape. An immense bearer. Late Sept.

•**Emperor.** Large; oblong; deep rose; one of the most profitable market grapes. Withstands rain better than any other variety. Vine strong grower, heavy bearer. Nov.

•**Flame Tokay.** Large; pale red, covered with bloom; flesh firm, sweet. Commands a good price in Eastern markets. Sept.

•**Malaga.** Very large; oval; yellowish green; fleshy; one of the best shipping grapes. Immensely productive, thriving in almost any soil. Makes good second-quality raisin. Aug.

•**Dattier de Beyrouth (Rosaki).** Introduced from Europe. Bunches large, only slightly shouldered; berries loose, never compact. Berries very large; quite oval in form, of a beautiful golden amber and covered with a whitish bloom; very fleshy; juicy and sweet, with little or no acidity. Its keeping qualities are unsurpassed. Makes a very fine raisin. Aug.

	EACH	10	100	1000
On own root.....	\$0 25	\$1 50	\$4 00	\$20 00

Rare Foreign Grapes**For Table and Shipping**

	EACH	10	100	1000
Price.....	\$0 20	\$1 50	\$5 00	\$30 00

•**Almeria.** Bunches large; berries medium. Ripens with Emperor and greatly valued as a late white shipping grape, especially for packing in redwood sawdust in drums. Vine vigorous. November.

•**Black Morocco.** Very large; black; flesh firm, juicy, sweet and crackling. Nov.

Chasselas Ciotat. Bunches small, compact; fruit greenish-white, small, juicy; leaves lacinated. Ripe about Aug. 1

Chasselas de Fontainebleau (White Sweetwater.) Medium size; round; greenish yellow; pulp juicy, sweet. Late July.

•**Golden Champion.** Golden yellow; large; round; flesh juicy; a fine table grape. Aug.

•**Gros Colman.** As large as Damson Plums; skin thin; dark; covered with bloom; flesh firm, with a pleasant vinous flavor. Nov.

Rose of Peru. Large; fruit round; highly esteemed as a market variety. Oct.

Sabal Kanski. Large; coppery red; bunches often weigh 8 pounds. Sept.

Foreign Wine Grapes

	EACH	10	100	1000
Price.....	\$0 15	\$1 00	\$3 00	\$18 00

•**Alicante Bouschet.** Red; gives a very superior wine; bright in color. Sept.

Aramon. Red; bunches and berries large. Bears heavier crops than any other grape; on mature vines averages 12 tons to acre. Very strong grower. September.

Black Malvoise. Bunches large and long; berries large, black, oval. An excellent table grape and a valuable wine variety. Sept.

GRAPES—Continued page 46.



A Twelve-Year-Old Thompson Seedless Vine Showing the Results Obtained by the Single Cane Method of Pruning. This Vineyard of Four Acres in 1917 Produced 73 Tons of Grapes.

GRAPES—Continued.

***Burger.** German; produces a light, white wine of excellent quality. Sept.

***Carignan.** Medium, slightly oblong; makes a superior type of red wine. Vine a fine grower and abundant bearer. Sept.

***Fehér Zagos.** Very productive in sandy soils; greenish; a valuable sherry grape. A good grape for interior valleys. Sept.

***Grenache.** Heavy producer in the interior; makes an excellent claret. Always in good demand at the wineries. Sept.

Mission. Berries medium, round, purple-black, sweet and delicious. Sept.

***Petit Syrah (Serine).** Medium; black; one of the best of the claret types. Sept.

***Zinfandel.** Round; dark purple; most extensively planted in California for claret. Sept.

Raisin Grapes

***Muscat.** The variety so extensively planted for raisins. Fine for table and wine. Sept.

	EACH	10	100	1000
Price.....	\$0 15	\$1 00	\$4 00	\$25 00

***Sultana.** Small; amber colored; seedless; makes fine seedless raisins. Aug.

	EACH	10	100	1000
Price.....	\$0 15	\$1 00	\$3 00	\$20 00

***Sultanina Rosea.** Identical with the well-known Thompson Seedless in everything except color. The berries are oval; medium in size and vary in color from a violet-rose to a deep coppery red; loose in cluster. Early Aug.

	EACH	10	100	1000
Price.....	\$0 25	\$2 00	\$10 00	

***Thompson's Seedless (Sultanina Blanche).** Very large; greenish yellow; firm; oval, seedless; prized for shipping and raisins. Aug.

	EACH	10	100	1000
Price.....	\$0 15	\$1 00	\$4 00	\$25 00

***Zante Currant (Black Corinth).** Bunches medium; berries small, seedless; skin thin; black; blue bloom. This is the variety producing the currant of commerce, under the name "Zante Currant," of which there are imported into the U. S. annually from Greece over 1,000,000 lbs.

This offers a great opportunity for the planters of the interior valleys where this variety has been thoroughly tested and found adapted to our conditions. August.

White Corinth. White, otherwise same as above.

	EACH	10	100	1000
Price.....	\$0 25	\$2 00	\$10 00	



Gros Colman, Large Black Grape. See page 45.

American Grapes

It is sometimes said that American Grapes do not bear well in California. This statement is not in keeping with the facts for they do bear most abundantly when properly taken care of. They are especially desirable for arbors and to run over unsightly out houses. Should be planted much more largely than they have been. We list the very best in black, white and red varieties. Our vines are grown in suitable soil producing vigorous vines with strong, well developed root systems.

	EACH	10	100
Price.....	\$0 20	\$1 50	\$10 00

Except Campbell's Early

***Agawam.** One of the best red varieties; large; pulp tender; sweet. Aug.

Catawba. Coppery red, becoming purplish when well ripened; vinous and rich. Sept.

***Concord.** Bunch and berry very large; blueblack; sweet, pulpy, tender. Aug.

Isabella. Berries black; oval; juicy, sweet, with distinct musky flavor. An immense bearer and valuable market variety. Sept.

***Moore's Early.** Very large; black, resembling Concord; ten days earlier. Aug.

Niagara. Pale yellow; flesh tender, sweet; one of the best whites. Sept.

Pierce (Isabella Regia). Of extraordinary size; exceedingly sweet. Leaves large. Originated by J. P. Pierce of Santa Clara and known in Southern California as the California Concord, which it resembles, but is much larger. Cannot be surpassed by any of the American varieties. Late Sept.

Worden. Bunch and berry large; black; compact; handsome; fine table grape. Aug.

Campbell's Early. Extremely early. Bunch and berry large and glossy black, with blue bloom; very sweet and juicy. Aug.

	EACH	10	100	1000
Price.....	\$0 25	\$2 00	\$15 00	\$65 00

Foreign Wine and Table Grapes**Grafted on Phylloxera-Resistant Roots**

	EACH	10	100	1000
Price.....	\$0 30	\$2 50	\$12 50	\$100 00

Grafted on Aramon X Rupestris Ganzin No. 1.

Black Ferrera **Pierce**
Black Morocco **Sultanina Rosea**
Dattier de Beyrouth **Zante Currant**

Grafted on Mourvedre X Rupestris 1202.

Almeria **Gros Colman**
Black Hamburg **Malaga**
Black Morocco **Rose Cornichon**

Grafted on Rupestris St. George.

Emperor **Muscat**
Flame Tokay **Thompson's Seedless**
Malaga **Zante Currant**

Grafted on Riparia X Rupestris 3306

Muscat **Zante Currant**

Grafted on Riparia X Rupestris 3309

Muscat **Zante Currant**

Varieties of Recent Introduction

	EACH	10	100
Price.....	\$0 50	\$4 00	\$30 00

Grafted on Aramon X Rupestris Ganzin No. 1

Damas Rose **Maraville de Malaga**
Dronkane **Olivette de Vendemian**
Gros Guillaume **Roeding's Imp. Thompson**

Seedless**Grafted on Mourvedre X Rupestris 1202**

O'hanes d'Almeria **Olivette Blanche**

Grafted on Rupestris St. George

Roeding's Improved Thompson Seedless

Grafted on Riparia X Rupestris 3309

Roeding's Improved Thompson Seedless

Phylloxera-Resistant Grapes

These vines are all well established and have a fine root system. They can be bench-grafted and planted in vineyard form, or in nursery rows this season.

	EACH	10	100	1000
Aramon X Rupestris Ganzin No. 1	\$0 25	\$2 00	\$6 00	\$30 00
Berlandieri X Riparia	20	1 00	....	18 00
Mourvedre X Rupestris 1202	25	2 00	4 00	25 00
Riparia X Rupestris 3306 ..	20	1 00	3 00	18 00
Riparia X Rupestris 3309 ..	20	1 00	....	18 00
Riparia X Rupestris 101¹⁴ ..	20	1 00	....	18 00
Riparia X Cord				
X Rupestris 106⁸	20	1 00	....	18 00
Rupestris St. George	20	1 00	3 00	18 00
Solonis X Riparia 1616	20	1 00	....	18 00

THE SMALL FRUITS

This term usually applies to the berry family—Blackberries, Raspberries, Currants, Gooseberries, Strawberries, etc. The whole Pacific Slope, wherever fruit soils and sufficient moisture prevail, is adapted to their successful culture. In California there is almost a continuous growth, and intermittent cropping can be carried on almost during the entire year. Every family orchard should have a plot devoted to small fruits, and where the conditions are favorable near to markets they can be made immensely profitable when grown along commercial lines.

PREPARING THE GROUND

The preparation of the soil should be thorough. The roots being close to the top of the ground and of a small, rather fibrous nature, the importance of having the soil in the very best possible condition to insure a good stand of plants and a satisfactory growth must be apparent to anyone engaging in the culture of berry plants. Thorough dressing with well-rotted stable manure will do much to promote a vigorous growth the first season, and having secured this, profitable crops may be expected the second year after planting.

Berry culture cannot be successfully carried on in California without irrigation, so that before planting, the land should be graded, having the grade as uniform as possible so as to prevent flooding. A berry grower should be absolutely certain of water when it is required, and if there is any question about the supply from ditches, a pumping plant should be installed to have water available whenever it is needed. A delay of even a few days may mean the loss of the entire crop.

THE STRAWBERRY

Strawberries bear almost the entire year in several of the coast counties, and the same may be said of the plants in the interior valleys, where they are properly mulched and irrigated.

In laying off ground for strawberries, the first essential point is to grade the plot so it has a gradual fall, so that no part of the rows will become submerged in irrigating. There are a number of methods for laying out strawberry beds, but the one mostly followed by commercial growers is to plant in rows, hilled up and about two feet apart, with a ditch between for irrigating. Set the plants eighteen inches apart in the rows. The best time to set the plants is late in the fall after a heavy rain or any time in January or February. It is very important during the fruiting season to keep the plants in an active state of growth by irrigating, weeding and cultivating. In order to obtain large, highly flavored fruit, pinch off the runners as fast as they appear, and this will cause the plants to stock out as it were, on which the very finest strawberries may be expected the following season.

It is advisable to divide the bed into checks or divisions, not to exceed 100 feet and have the same almost on a dead level. This is very important, for when irrigating the water stands on the same level throughout the row and prevents damage to the berries and plants alike.

	10	100	1000
Plants.....	\$0 30	\$2 00	\$7 50

Except Banner.

***Brandywine.** Large; roundish; conical; flesh firm; a valuable medium to late variety.

***Dollar.** The popular berry of the Florin and Watsonville districts. Staminate, exceedingly prolific. Berries good size, dark-red color.

***Jessie.** Large; handsome; roundish; conical; dark red; plant vigorous and productive.

***Marshall.** Very large; dark rich crimson; quality good; firm

THE BANNER STRAWBERRY

(Reproduced in color on back cover.)

NOT A NOVELTY, BUT A TRIED OUT DEPENDABLE, PROFITABLE MARKET BERRY THAT EVERY GROWER SHOULD PLANT

The berry most desired by the grower is one medium to large in size, which bears abundantly and ships well. Such is the Banner, being also a full rich Strawberry red all over of excellent quality and is therefore not a disappointment to the consumer. The vines are of a most vigorous habit as may be observed by referring to photographs on back cover.

From the patch there shown truck loads of fine berries were sent each day to the markets in San Francisco where they regularly brought about 20 per cent more than was paid for any other berry. As usual in such cases some growers are attempting to place on the market other varieties calling them "Sunnyvale Banner berries."

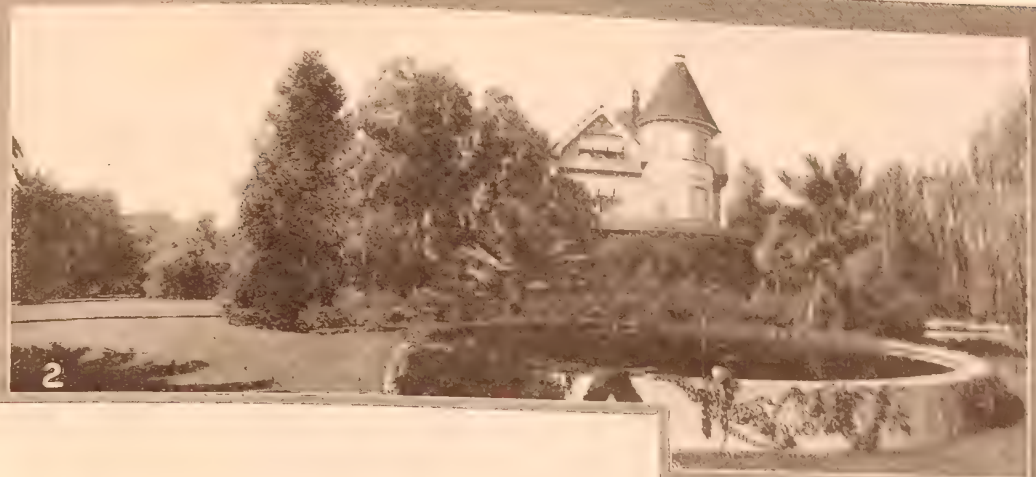
The berry has a distinct color and its bearing qualities are all that could be desired. It is our desire to distribute the plants of this valuable variety as much as possible and therefore we cannot offer large quantities to any one customer.

PRICES FOR BANNER:

Each	10	100	1000
\$0.10	\$0.60	\$4.00	\$15.00



Mr. Chas. E. Jackson, Santa Clara County, Showing Four Trays of Banner Strawberries. From this Patch of Nine Acres Mr. Jackson Marketed \$12,000 Net.



1. Unloading Franquette Walnut Trees at Packing House.
2. Roeding Place—Near Fresno.
3. A Corner in One of Our Ornamental Nurseries.

4. Deciduous Fruit Tree Stock—Ready for Packing.
5. Cypress Trees—Trained Evergreens a Specialty.

6. Roeding Record Bearing Olive Trees from Which We Cut Scions for Propagation.
7. One View of Our Large Rose Blocks.
8. Fine Block of Lemon Trees at Our Nurseries in Orange County, California.

LOGAN, MAMMOTH AND HIMALAYA BLACKBERRIES

Are practically in a class by themselves, and the cultural directions for one apply to the other, so we will consider them under the same head. They should be planted in rows six feet apart and eight to ten feet between the rows. The best results are obtained by trellising the runners to wires on heavy posts which will hold the wire taut. As soon as the fruiting season is past the fruiting canes should be cut away and the new canes be bunched together and wound around the wire. At least two wires should be strung on the posts, so that as soon as one wire is covered the remaining canes may be wound around the other. By following this method from year to year a heavy crop of large, fine berries may be looked for annually.

A novel method of handling them is to plant in squares 8x8 feet. Drive three stakes one and one-half feet into the ground, using 2x2 6-foot posts. Nail an old barrel hoop on the top of the posts, and another two feet from the top. The shoots are trained over these hoops. It is simply astonishing the amount of fruit which will be obtained by this method of handling. Another satisfactory plan is to set 4x6, 7-foot posts twenty feet apart and nail 2x2, 18-inch cross ties to each post. Set the posts three feet in the ground and string No. 12 galvanized wire on the cross ties, holding it in place with staples. The new shoots should be trained across, winding them around the wires from one wire to the other.

LOGANBERRY

Fruit is $1\frac{1}{4}$ inch long, dark red; as large as the largest blackberry and partakes of the flavor of both the blackberry and raspberry; excellent for table, eaten raw or stewed; makes a fine jelly or jam. Ripe in May.

	EACH	10	100	1000
Tips.....	\$0 20	\$1 00	\$5 00	\$30 00

MAMMOTH BLACKBERRY

Supposed to be a cross between the wild blackberry of California and the Crandall's Early. Deep red; enormously productive and exceedingly early; fruit enormous size.

	EACH	10	100	1000
Tips.....	\$0 20	\$1 00	\$6 00	\$50 00

HIMALAYA BLACKBERRY

Imported originally from the Himalaya Mountains. It is a remarkable grower, canes growing 40 feet in a single season; an enormous bearer, a good shipper; berry round; very few seeds and with almost no core. June to late fall.

	EACH	10	100	1000
Tips.....	\$0 20	\$1 00	\$6 00	\$50 00

THE BLACKBERRY AND RASPBERRY

The most satisfactory way of handling blackberries is to plant in rows six feet apart, with eight feet between the rows. The first season all the shoots which have attained a height of two feet should be shortened into twenty inches. This will cause them to send out many lateral shoots, so that instead of having the fruiting shoots confined to a few canes, there will be a number of lateral shoots from each of the main canes for producing fruit clusters. These laterals should have one-half of their growth cut off in the winter months. In the second year, as soon as the season's crop has been harvested, cut away the fruiting wood, so that all the energy of the plant will be forced into the new growth. The young shoots should again be cut back at the proper height to develop laterals, and these, as has already been directed, should be cut back in the winter months. This method of pruning has other advantages by making the canes sturdy and self-supporting, and causes the fruit to be distributed over the entire plant instead of being confined to the terminal growth.

By having the rows eight feet apart, cultivation can be carried on with a horse, a very important point. A good supply of water, thorough cultivation and liberal application of rotted barnyard manure are important factors in the cultivation of the blackberry.

BLACKBERRY

	EACH	10	100	1000
1 year.....	\$0 15	\$1 00	\$5 00	\$30 00

***Erie.** Largest size; coal-black. Excellent quality; very productive and very hardy.

Evergreen. Large; black; sweet. Berries large, sweet and delicious. Continues to ripen from July to November; desirable for arbor or trellis. Foliage cut-leaved, evergreen.

Lawton. Large; ripens late; very productive. Thoroughly tested and well-known. A dependable variety.

RASPBERRY

	EACH	10	100	1000
1 year.....	\$0 15	\$1 00	\$5 00	\$30 00

Except Superlative.

***Cuthbert.** Large; rich crimson; good shipper.

Golden Queen. Large; golden yellow; fine quality.

***Gregg.** Standard blackcap; productive and hardy; seeds large; best shipper.

***Superlative.** New. Large; red; conical; very fine flavor; ships well. A great improvement over all other varieties of raspberries. It is a continual bearer; bears fruit throughout the summer on the young shoots; deserves a wider planting.

	EACH	10	100
Tips.....	\$0 20	\$1 50	\$10 00



A Berry Patch for the Home. Row 1—Loganberry; Row 2—Raspberry; Row 3—Himalaya Blackberry.

THE DEWBERRY

The improved varieties of Dewberry or trailing blackberry are very popular. They are enormous croppers, produce fruit of the very best quality, which ripens fully two weeks earlier than any of the blackberries. Plants should be set four feet apart, with rows six feet apart. When there is not sufficient rainfall to keep the vines in active growing condition, irrigation should be practiced. Immediately following the harvesting, all the old canes should be cut off, and the following spring the new ones should be trained to a wire two feet from the ground. The method of trellising is the same as for the other varieties of trailing vines, except that the canes are trained within two feet of the ground.

	EACH	10	100	1000
Tips.....	\$0 15	\$1 00	\$5 00	\$30 00
*Gardena. Large; glossy black; delicious; heavy bearer. Middle of May.				
Lucretia. Very large; glossy black; luscious. Dense foliage. May 1.				

CURRENT AND GOOSEBERRY

Are usually planted in rows five feet apart; the plants standing three feet apart in the rows. They will not thrive in the hot interior valleys, being subject to sunburn. It is only practical to grow them in the coast counties; they attain perfection when they get the benefit of the cool, moist air from the ocean.

Prune in winter, thinning out the new shoots when they are too thick, and remove the old unfruitful wood. Thorough cultivation, but not deep, is at all times advisable.

Currants

	EACH	10	100
1 year.....	\$0 20	\$1 50	\$10 00
Except Crandall's Black and Perfection.			
Cherry. Very large; deep red.			
*Fay's Prolific. Bright red; very sweet.			
*White Grape. Large; yellowish white.			
*Crandall's Black. The only variety which will grow in the hot interior valleys; deep black; very large.			
	EACH	10	100
1 year.....	\$0 30	\$2 50	\$15 00
*Perfection. New. Large, bright red; rich sub-acid flavor; plenty of pulp and few seeds. A very heavy bearer.			
	EACH	10	
1 year.....	\$0 40	\$3 00	

Gooseberries

In the mountains at an elevation of 3,000 feet, and anywhere in the coast regions, the gooseberry thrives and produces an abundance of fruit.

	EACH	10	100
1 year.....	\$0 25	\$2 00	\$15 00
*Downing. Good size; whitish green; good.			
*Oregon Champion. Very large; brownish red.			
*Smith's Improved. Quite large; light green.			



Plenty of Berries in the Home Garden is an Easy Matter.

VEGETABLES AND ESCULENT ROOTS

ASPARAGUS

	10	100	1000
Roots.....	\$0 50	\$2 00	\$15 00
Conover's Colossal. A standard kind of first quality; tender and highly flavored.			
Palmetto. A valuable variety, producing enormous and delicious sprouts.			

ARTICHOKE

There are two distinct types. The one so much prized by epicures and which is so extensively grown in California, particularly in the suburbs of San Francisco where it produces from early winter and practically through the entire summer, is the Globe Artichoke (*Cynara scolymus*). It is a gross feeder and must be well manured. In the interior sections of the State its flower buds do not appear until late spring. The plant presents a very tropical appearance, and is therefore a valuable addition to any garden. The flower buds should be cut off as soon as they are well formed and before the scales open, otherwise they are tough and tasteless. Never allow the flowers to mature as the plants will dwindle down and die. Suckers should be taken during the winter months and planted in rows three feet apart, six feet between the rows.

Experience has demonstrated that the best quality of artichokes is produced by cutting the plants down during the month of July, thus stimulating the growth, causing them to produce an abundance of flower buds during the winter and spring months. San Francisco County is the great artichoke center of California; shipments annually aggregating 500 carloads from this point.

Globe. Plant presents a very tropical appearance and is therefore a valuable addition to any garden. Flower-buds should be cut off as soon as they are well formed and before the scales open, otherwise they are tough and tasteless. Never allow flowers to mature, as plants will dwindle down and die.	EACH	10	100
Plants.....	\$0 20	\$1 50	\$12 00

JERUSALEM ARTICHOKE

Jerusalem Artichoke. (*Helianthus tuberosus*). Radically different in its character of growth from the preceding, and will thrive on any well drained soil. The tubers should be cut to single eyes and planted in rows eighteen inches apart with rows four feet apart. The method of cultivation and hilling is practically the same as for potatoes. The tubers are not mature until the tops are frozen when they may be dug up and used for hog feed, or the animals may be turned loose to feed and root them out themselves. They produce enormously on good soil; with liberal cultivation and moderate irrigation, fifteen to twenty tons to the acre. This vegetable is highly prized by the French people, and in New Orleans, where it is extensively grown, it is prepared for table use by stewing, for making soups and as a salad. For the farmers of California it possesses so much merit that no farm having a few hogs should be without a patch of these tubers, which will supply feed during the winter months when all other foods are scarce and high.

White. Resembles a potato more than an artichoke, having shallower eyes, much smoother skin than the preceding.

	5 lbs.	100 lbs.
Tubers.....	\$1 00	\$5 00

RHUBARB

Burbank's Crimson Winter. Pale, greenish crimson; especially adapted to the long seasons of California.			
	EACH	10	100
Roots.....	\$0 25	\$2 00	\$15 00
Burbank's Giant Crimson Winter. A robust grower and prolific producer of mammoth stalks, three times the size of the older sort; thrives amazingly during the winter months; of fine flavor.			
	EACH	10	100
Roots.....	\$0 50	\$4 00	\$30 00
Myatt's Linnaeus. Large; early; tender and fine.			
	EACH	10	100
Roots.....	\$0 15	\$1 25	\$10 00

HOP ROOT

Climbing vines valuable for ornament and yielding the hops used by brewers. The male plant is not necessary except where the hop is planted commercially.	EACH	10
Male.....	\$0 20	
Female.....		10 \$0 75

LANDSCAPING SERVICE

LET OUR EXPERIENCE INSURE SATISFACTORY PLANTING

THE PLAN for the proper laying out of the home grounds is as necessary as the plan for the building. This is a recognized fact and most people today realize that the beautification of the home grounds is an investment and not an expense.

It too often happens that a man spends thousands of dollars in the building of a home and then leaves the adornment of the grounds to chance, either making an attempt himself or leaving it in the hands of inexperienced persons, with the result that the plants are planted without regard to their character or adaptability to the location, their ultimate size, soil or climatic conditions. No improvement connected with the home will enhance its value as much as the surrounding grounds if they are planted in an attractive and artistic manner.

Mistakes made at the beginning often prove costly and amount to more than the small charge made for a plan, to say nothing of the disappointment and delay in trying to secure the proper effect afterward.

IMPORTANCE OF PLANS.—The art of Landscape Gardening requires, as well as an artistic arrangement of the grounds, a thorough knowledge of plants and their adaptation to the various soils and climatic conditions. This is especially important in the State of California where the variance of soil and climatic conditions are such that the proper selection of varieties insures success as against failure where wrong varieties are planted.

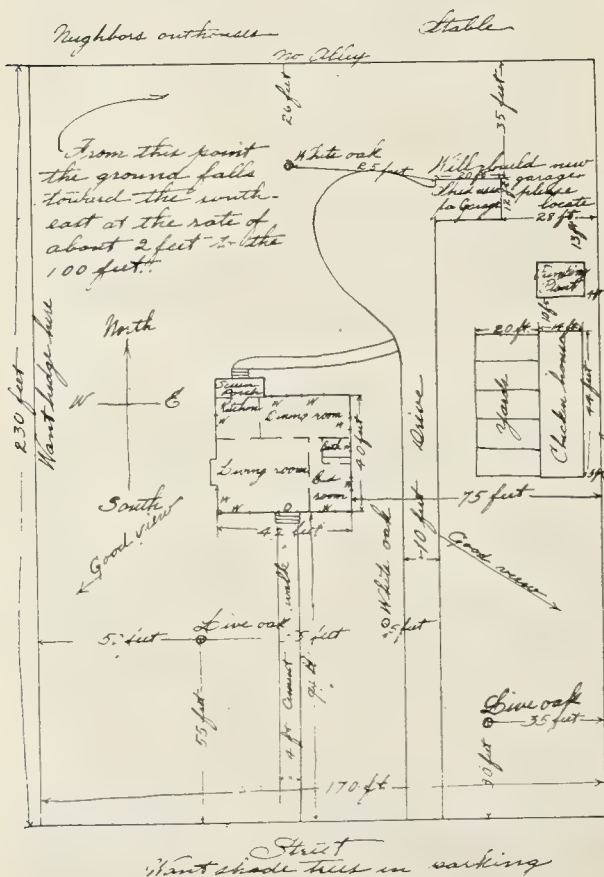
It is just as important to properly plan the grounds for the small home as for the large and more pretentious place. A modest cottage with a planting that is in harmony is preferable to the more pretentious home with a planting that is not in harmony. We plan the surroundings to fit the home, whether elaborate or simple.

PLANS.—Our Landscape Department is under expert management and many years of experience places us in a position to give you the very highest service. On the following terms we will make a sketch showing how to plant your grounds in an artistic and attractive manner. Send us a rough sketch of your grounds, showing the location of buildings, walks and drives (if any), and anything else of a permanent nature. For your convenience we have prepared a list of questions, the answers to which will give us the information we require. **OUR FREE SKETCH PLAN CROSS-SECTION BLANK** will make it easy for you to draw your sketch. The directions given are so simple that any inexperienced person can make this rough sketch. Send for these free blanks today.

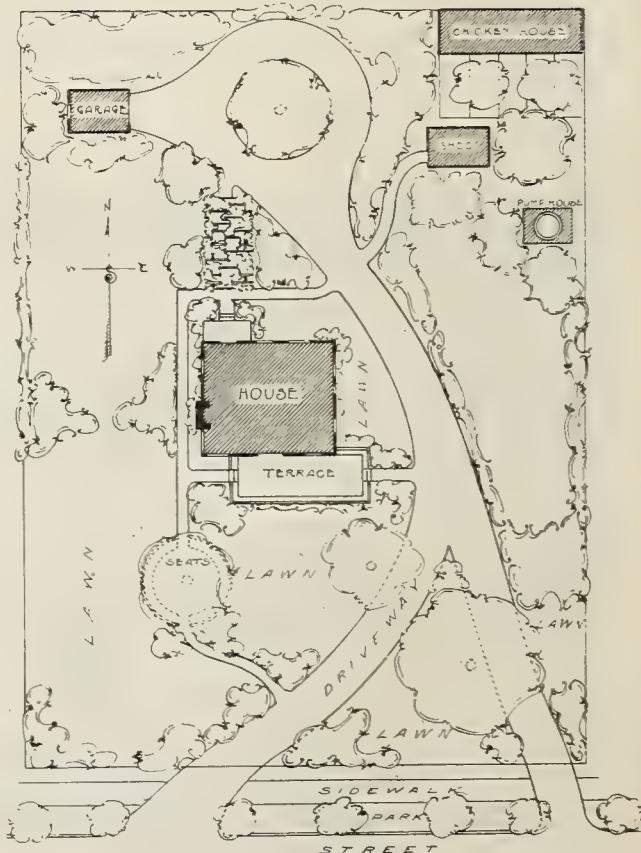
OUR OFFER.—When you send your sketch to us remit One Dollar (\$1.00); in return we will send you a coupon for this amount and this coupon will be accepted by us for its full value as part payment on any order



Rose Garden, Kearney Park, Fresno.



A sample sketch sent to us by one of our customers.



The same sketch drawn by our Landscape Designer.

for Nursery Stock amounting to \$5.00 or more. This is simply made to guard against curious persons who might ask for plans with little or no intention of making use of them. When your sketch is received our Landscape Designer, after giving the same careful study, will submit to you a preliminary plan outlining the proposed planting, for your approval, and an estimate of the cost of a complete plan drawn to a scale. This will not only show the location of the trees and plants but in addition thereto will give every detail, making it possible to proceed with the laying out of the grounds and the planting. Our charges are as reasonable as possible consistent with good work.

PERSONAL ATTENTION. We have no stock plans; our customers may rest assured that we give our personal attention to their particular requirements, for we fully realize that each case presents a different problem. Bear in mind when we present a plan prepared by our landscape designer, that special care has been exercised by the head of the landscape department in the selection of trees, shrubs and plants particularly suited to your soil and climatic conditions.

We are prepared to make plans for plantings from the humblest homes to the largest estates, parks, factory and school grounds, etc., and solicit correspondence from parties desiring such work. In the larger grounds it is usually advisable to make a personal visit, in which case a competent man will be sent to inspect the grounds and advise how to carry out the work to the best advantage.

SIZE AND PRICE OF STOCK. We are prepared to furnish stock to carry out your planting in anything from small potted plants to large, well matured specimens for making an immediate effect. Estimates will be made on the stock required for the planting when the plans are sent. If you do not care to make the entire planting at one time, the work can be carried out in separate units from time to time with our plans before you.

FREE CONSULTATION. There are many problems that confront the planter in which he is all at sea, such as where to plant, what to plant or how to secure a certain effect; the proper varieties to use, pruning, fertilizing, etc. You can secure any of this information desired **FREE** by addressing our Landscape Department.

Don't wait to take up the matter of your plantings later, but **WRITE TODAY** for our **FREE SKETCH PLAN CROSS-SECTION BLANK** and **INFORMATION SHEET**. Fill them out and send to us as soon as you can so that we can give ample time and thought to the details of your plan and send you the finished work before you are ready for planting.

RURAL PLANTING. The increasing interest in ornamental planting in the past few years is very noticeable in the rural districts as well as in the cities. The automobile and good roads are probably two important factors in bringing about this change. This mode of travel has brought people in closer touch with the beautiful country estates and fine city homes, awakening in them a greater interest in their own home and surroundings. The progressive farmer of today is using every effort to make his home attractive and inviting like that of his city brother by beautifying his grounds with trees and shrubbery, for he fully realizes how much it adds to the value of his property.



A Formal Garden Scene Showing Boxwoods and Hydrangeas in Tubs, a Lily Pond and Pergola Covered with Wistaria.



Home Grounds of Mr. R. C. Merryman, Exeter, Cal.

SPECIMEN PLANTS

We Have in Our Nurseries many Specimen Trees and Shrubs in the Different Varieties that are Suitable for Planting for Immediate Effect. These Trees and Plants have been Grown with Special Care into Well Shaped and Matured Stock and by Planting this Class of Stock You will Save, in Many Cases, Years of Time Over and Above Planting Young Plants from the Nursery and in Addition to this You will Have the Pleasure of your Grounds having a Finished Effect as soon as the Planting is Done.



Scene in Kearney Park, Fresno—Donated to the State University by Mr. Theo. M. Kearney

TREES AND SHRUBS SUITABLE FOR HEDGES

Deciduous Trees

Honey Locust (*Gleditsia triacanthos*).
Pomegranate (*Punica*).
Privet (*Ligustrum*).
Quince (*Cydonia*).

Deciduous Shrubs.

Barberry (*Berberis*).
Lilac (*Syringa*).
Spirea (*Spiraea*).

Evergreen Trees.

Arborvitae (*Thuja*).
Camphor (*Camphora*).
Beefwood (*Casuarina*).
Cypress Monterey (*Cupressus macrocarpa*).
Eucalyptus.
Juniper (*Juniperus*).
Oak Holly or Holm (*Quercus ilex*).
Yew (*Taxus*).

Evergreen Shrubs

Abelia.
Azara microphylla.
Barberry (*Berberis*).

Boxwoods (*Buxus*).
Leptospermum laevigatum.
Mahonia's.
Evergreen Honeysuckle (*Lonicera nitida*).
Burning Bush (*Pyracantha*).
Cherry Evergreen (*Cerasus*).
Choisya ternata (Mexican Orange).
Coprosma baueriana picturata.
Cotoneaster.
Duranta plumieri.
Eleagnus (Evergreen Oleaster).
Escallonia.
Eugenia.
Evonymus.
Guava.
Hypericum patulum henryii.
Hakea (Sea Urchin).
Laurustinus (*Viburnum tinus*).
Myrtle (*Myrtus*).
Pittosporum (in variety).
Plum Natal (*Carrisa grandiflora*).
Privet (*Ligustrum*).
Teucrium fruticans.
Veronica.
Roses.

CALIFORNIA NATIVE TREES AND SHRUBS

Deciduous Trees

California Buckeye (*Aesculus californica*) Horse Chestnut
Cottonwood (*Populus fremontii*).
Maple Ash Leaf (*Acer negundo*).
Oak Valley or Weeping (*Quercus lobata*).
Plum "Vesuvius" (*Prunus*).
Walnut California (*Juglans californica*).

Evergreen Shrubs

Carpenteria californica (Wild Anemone).
Ceanothus thyrsiflorus.
Cherry Broadleaved (*Cerasus integrifolia*).
Cherry California Evergreen (*Cerasus ilicifolia*).
Christmas Berry (*Heteromeles arbutifolia*).
Fremontia californica (False Slippery Elm).
Garrya elliptica (Silk Tassel Bush).
Mahonia aquifolium (Oregon Grape).
Mahonia pinnata.
Romneya coulteri (Matilija Poppy), California Tree Poppy.
Washingtonia filifera (Cal. Weeping Palm).
Washingtonia robusta (Cal. Fan Palm).
Yucca whipplei.

Evergreen Trees

Arborvitae Gigantea (*Thuja plicata*).
California Big Tree (*Sequoia gigantea*).
California Redwood (*Sequoia sempervirens*).
California Laurel (*Umbellularia californica*).
Cupressus goveniana (Govens Cypress).
Cypress Lawson (*Cupressus lawsoniana*).
Cypress Monterey (*Cupressus macrocarpa*).
Libocedrus decurrens (Incense Cedar).
Madrona (*Arbutus menziesii*).
Nutmeg California (*Torreya californica*).
Oak California (*Quercus agrifolia*).
Oak Chrysolepis (Maul Oak).
Oak Densiflora (Tan Bark Oak).
Pine Coulteri (Bull Pine).
Pine Ponderosa (Western Yellow Pine).
Pine Radiata (Monterey Pine).
Pine Muricata (Coast Pine).
Pine Torreyana (Soledad Pine).
Spruce Menzies (Sitka Spruce).

A LIST OF DECIDUOUS TREES FOR STREET PLANTING

Albizia Julibrissin
Ash in variety
Catalpa in variety
Cottonwood
Elm in variety
False Walnut
Hackberry
Locust in variety
Horse Chestnut
Judas Tree

Linden
Maple in variety
Mulberry in variety
Oak in variety
Pagoda Tree
Poplar in variety
Liquidambar
Sycamore in variety
Umbrella
Walnut

A LIST OF EVERGREEN TREES FOR STREET PLANTING

Acacia Dealbata
Acacia Mollissima
Acacia Melanoxylon
Acacia Baileyana
Acacia Decurrens
Acacia Floribunda
Casaurina Equisetifolia
Casaurina Stricat

Brachychiton Diversifolia
Brachychiton Acerifolia
Camphor
Eucalyptus in variety
Jacaranda Mimosaefolia
Magnolia Grandiflora
Oak in variety
Pepper
Silk Oak

VINES SUITABLE FOR GROUND COVERS

Ampelopsis in variety
Bignonia in variety
Evonymus Jap. Radicans
Honeysuckles in variety

Ivy in variety
Lantana Sellowiana
Plumbago

VINES THAT WILL CLING WITHOUT SUPPORT

Ampelopsis Veitchii
Ampelopsis Englemanni
Evonymus Jap. Radicans
Decumaria Barbara

Bignonia Tweediana
Ficus Repens
Ivy English

Ornamental Department

That this book may be plain to our customers not familiar with botanical names, we have used the common name of all varieties except where the botanical name is more generally used.

After the common name, where used, we follow with the botanical name and these names are cross indexed (see index) for the convenience of all customers.

Where the height is given it has reference to the height the tree or plant finally attains under normal conditions.

The nativity is given as nearly as known but in some instances this can be given only in a general way.

Space will not permit us to give more than a very brief description of ornamentals in this catalogue. Further descriptions will be supplied upon request. We shall be pleased to quote special prices on larger grades of deciduous trees than those quoted in this list. Before shipping these large trees, we invariably cut them back to 10 feet and shorten in the side branches for the purpose of saving freight charges. When these trees are planted, cut them down to within 8 feet of the ground, shortening lateral branches, to six inches from the stem of the tree and thin out if too many. To such customers as desire to purchase ornamentals in large quantities, we would esteem it a favor if they would send us a list of their requirements for special quotations.

DECIDUOUS TREES

ALBIZZIA JULIBRISSIN. (*Acacia nemu.* Constanti-nople *Acacia.*) Asia. 40 to 50 feet. A handsome shade and avenue tree; fine, feathery foliage; highly adapted to California. Very hardy and when covered with its mass of pink feathery flowers in the early summer months, presents a beautiful appearance.

	EACH	10
10 to 12 ft.	\$1 50	\$12 50
8 to 10 ft.	1 25	10 00
6 to 8 ft.	1 00	8 00

ALMOND, Double White, (*Amygdalus davidiana alba*). Europe, 15 feet. First tree to bloom in the spring. Double white flowers appearing before the leaves. Very hardy.

Double Pink, (*A. davidiana rubra*). Red flowers; very double.

	EACH	10
3 to 4 ft.	\$0 50	\$4 00

APRICOT, JAPANESE (*Prunus mume*). 15 feet. A tree of dwarf habit, sending out long, pendulous branches. The small, double flowers make their appearance in February before there is any sign of foliage. This tree is worthy of extensive cultivation. Varieties, red and white.

	EACH	10
4 to 6 ft.	\$0 75	\$6 00

ASH (*Fraxinus*). Important forest trees; valuable for avenues and parks; forming tall, broad-headed trees. The wood is very valuable for the manufacture of carriages, tools, and for interior finish. Well adapted to California soils and climate.

	EACH	10
8 to 10 ft.	\$1 25	\$10 00
6 to 8 ft.	1 00	7 50

American White (*Fraxinus americana*) 120 feet. Magnificent avenue tree with broad, round head and dense bluish-green foliage.

Arizona (*F. velutina*). 40 feet. South-western U. S. Particularly recommendable for Alkaline Soil and in Arid regions. Thrives in Southwest Texas, New Mexico and Arizona.

European (*F. excelsior*). 120 feet. Beautiful rapid-growing tree with dark green leaves and black buds.

European Flowering (*F. ornus*). Of moderate growth, 25 to 30 feet. Flowers greenish white, fragrant, fringe-like, produced in early May in large clusters on the ends of the branches. Young branches purplish or livid with yellow dots.

BALD CYPRESS (*Taxodium distichum*). Southern U. S. 100 feet. A deciduous coniferous tree, of slender habit. Trunk straight and tapering. Foliage similar to Redwood. Does well in California. A fine avenue tree. Very desirable for a high hedge.

	EACH	10
6 to 8 ft.	\$1 50	\$12 50
4 to 6 ft.	1 25	10 00

BEECH (*Fagus*). Among the most beautiful of deciduous trees, with rich, glossy foliage. Do best in a cool, damp climate.

European (*F. sylvatica*). 80 feet. Compact head with foliage of deep, dark, glossy green.

	EACH	
6 to 8 ft.	\$1 00	

Purple-leaved (*F. sylvatica purpurea*). 80 feet. A most beautiful tree with deep purple foliage in spring, changing to crimson in fall.

	EACH	
6 to 8 ft.	\$2 50	

BIRCH, EUROPEAN WHITE. (*Betula alba*). 80 feet. A rapid-growing tree with silvery white bark, and slender drooping branches. Thrives in poor soils.

	EACH	10
6 to 8 ft.	\$1 25	\$10 00
4 to 6 ft.	1 00	7 50

BIRD CHERRY (*Cerasus padus*). Europe and Asia. 50 feet. Wide-spreading tree with long racemes of white flowers in spring and bearing a small black fruit, resembling wild cherries. Thrives well in the interior valleys.

	EACH	10
6 to 8 ft.	\$1 00	\$7 50
4 to 6 ft.	75	6 00

CATALPA. Highly ornamental trees with large, bright green heart shaped leaves and beautiful white or yellowish flowers in large showy clusters, followed by long slender seed pods. The wood is very durable in the soil, and valued for fence posts and railway ties. They are tropical looking trees and adapt themselves to almost any soil.

	EACH	10
10 to 12 ft.	\$1 00	\$7 50
8 to 10 ft.	75	6 00
6 to 8 ft.	60	5 00
4 to 6 ft.	50	4 00

Except **BUNGEI**.

CATALPA—Continued Page 57



Acacia—*Albizzia julibrissin*—a Truly Beautiful Avenue Flowering Tree.

CATALPA—Continued

Common (*C. bignonioides*). South U. S., 50 feet. A rapid-growing, spreading, irregular tree, with large, heart-shaped leaves; flowers fragrant, white and purple, hanging in clusters.

Japan (*C. kaempferi*). Somewhat dwarf in habit, with glossy green leaves. Flowers cream-colored, speckled with purple and yellow; very fragrant.

Western (*C. speciosa*). Eastern U. S. 100 feet. Rapid grower; most desirable where quick effects are desired.

Chinese (*C. bungei*). 15 feet. A remarkable species, forming a dense, round, umbrella-like head. Makes a beautiful tree when grafted or budded on a high stem; extensively used in formal gardening.

	EACH	10
COTTONWOOD (<i>Populus fremontii</i>). California. 70 feet. Very rapid growing tree with a spreading head. A splendid tree for quick shade.		
12 to 15 ft.....	\$1 25	\$10 00
10 to 12 ft.....	1 00	7 50
8 to 10 ft.....	75	6 00
6 to 8 ft.....	60	5 00

ELM (*Ulmus*). Stand in the first rank among American trees; grow rapidly; are long-lived, of very graceful spreading habit, and not over particular as to soil. Our trees are all budded or grafted insuring uniformity of leaf form and habit, making them particularly desirable for avenues and for specimen planting.

Purple-leaved (*U. scabra atropurpurea*). 60 feet. Leaves rich purple when young, changing to dark green when older.

Variegated (*U. campestris argenteo variegata*). 80 feet. Tree a rapid and erect grower. Large leaves, spotted with silver.

EMPRESS TREE, (*Paulownia imperialis*). Japan. 40 feet. A rapid, growing tropical looking tree, with enormous, round leaves; produces large clusters of purple, trumpet-shaped flowers in the spring. If the tree is cut down to the ground each winter, new suckers will shoot up from fifteen to twenty feet high, with leaves of immense size and splendid tropical effect. Grows best in deep moist soil.

	EACH	10
10 to 12 ft.....	\$2 00	
8 to 10 ft.....	1 50	
6 to 8 ft.....	1 25	

FALSE WALNUT (*Pterocarya stenoptera*). China. 60 feet. This rare but grand tree when once known will become one of our most popular trees as a single specimen or for avenue purposes. It forms an immense spreading clean topped head, with large compound leaves and long pendulous racemes of curious winged fruits. A magnificent specimen of this tree is growing at Stockdale, the property of Wm. S. Tevis, Esq., Bakersfield, Cal.

	EACH	10
12 to 15 ft.....	\$2 00	\$15 00
10 to 12 ft.....	1 50	12 50
8 to 10 ft.....	1 25	10 00
6 to 8 ft.....	1 00	8 00

FRINGE TREE (*Chionanthus virginica*). North America. 30 feet. A small tree with large dark green foliage and loose panicles of pure white flowers in April.

	EACH	10
4 to 6 ft.....	\$1 50	\$12 50
3 to 4 ft.....	1 25	10 00

HACKBERRY **AMERICAN NETTLE TREE** (*Celtis occidentalis*). 120 feet. A rare tree of large growth, with numerous slender branches; thick, rough bark; apple-like foliage; produces

Catalpa speciosa—A Rapid Growing Tropical Appearing Tree. Valuable for Timber.

	EACH	10	100
12 to 15 ft.....	\$1 50	\$12 50	
10 to 12 ft.....	1 25	10 00	\$90 00
8 to 10 ft.....	1 00	9 00	80 00
6 to 8 ft.....	80	7 00	60 00

American White (*U. americana*). Eastern U. S. 120 feet. A magnificent large tree, with drooping, spreading branches. One of the grandest of our native forest trees; requires moist soils.

Clemmeri. 40 feet. Of moderate growth, with narrow, pyramidal head. A very popular avenue tree.

Cork Bark (*U. campestris suberosa*). 80 feet. Very desirable for streets and avenues; young branches very corky.

French (*U. campestris latifolia*). 100 feet. An erect tree of rapid, compact growth, with dark green foliage. Very extensively used for avenue planting.

Golden English (*U. campestris aurea*). 30 feet. Foliage of a uniform bronzy gold color.

Huntingdon (*U. scabra vegeta*). 100 feet. Very erect habit; bark smooth; large leaves, one of the finest specimen and avenue trees. Especially suited for interior valleys.

Monumental (*U. campestris monumentalis*). 25 feet. Dwarf variety, forming a straight and dense column.

Nettle-leaved (*U. montana crispa*). 20 feet. Dwarf growing, with long, undulating leaves.

a small edible berry of an orange red color, when ripe. A desirable tree for street planting. Does splendidly in the San Joaquin Valley.

European Nettle Tree (*C. australis*). 60 feet. A valuable ornamental tree, with slender branches, leaves like the elm. Produces long, dark-purple, sweet fruits in the fall. Worthy of attention on account of its rare beauty and its adaptability to many soils and various climatic conditions.

	EACH	10
10 to 12 ft.....	\$1 25	\$10 00
8 to 10 ft.....	1 00	8 00
6 to 8 ft.....	80	7 00

HONEY LOCUST, COMMON (*Gleditsia triacanthos*). Eastern U. S. 70 feet. Very ornamental tree, with pinnate, glossy green foliage; greenish flowers and striking bean-like pods in fall. Thrive well in all parts of California and deserve wide planting.

	EACH	10
10 to 12 ft.....	\$1 25	\$10 00
8 to 10 ft.....	1 00	7 50

Japanese (*G. japonica*). 70 feet. A native of Japan. Its numerous spiny branches, dark lustrous green compound leaves and its long, flat twisted pods, combine to make it very effective whether planted singly or in groups.

	EACH	10
8 to 10 ft.....	\$1 00	\$ 7 50
6 to 8 ft.....	75	6 00

HOP TREE (*Ptelea trifoliata*). Eastern U. S. 25 feet. A small tree, with short, spreading branches and glossy green foliage. Flowers small, greenish white, followed in the fall by wafer-like fruits. EACH 10
6 to 8 ft. \$1 00 \$7 50
4 to 6 ft. 75 6 00

HORSE CHESTNUT (*California Buckeye*) (*Aesculus californica*). 30 feet. A symmetrical round headed native tree or large shrub. Leaves deep green. The profusion of white flowers in long panicles make it a strikingly beautiful tree. EACH
Potted, 1½ to 2 ft. \$0 75

JUDAS TREE (*Cercis*). Striking ornamental trees loaded with a mass of pea-shaped, pink blossoms in early spring, before the leaves appear. Pods remain all summer, very ornamental. EACH 10
8 to 10 ft. \$1 25
6 to 8 ft. 1 00 \$7 50
4 to 6 ft. 75 6 00

American or Red Bud (*C. canadensis*). United States. 20 feet. A medium sized tree, with perfect heart-shaped leaves. It derives its name of Red Bud from the profusion of delicate reddish-purple flowers with which it is covered in the early spring before the foliage appears; a very fine ornamental tree, thrives well in this valley.

White Flowering (*C. siliquastrum album*). S. Europe. 30 feet. Tree of the same habit as the above, but flowers are pure white.

KENTUCKY COFFEE TREE (*Gymnocladus canadensis*). Eastern U. S. 60 feet. An ornamental, hardy tree with rough bark, blunt, cane-like branches and white, fragrant flowers followed by pods which persist all winter. EACH 10
6 to 8 ft. \$1 00 \$7 50
4 to 6 ft. 75 6 00

LINDEN OR BASSWOOD (*Tilia americana*). 60 feet. A rapid growing, large sized tree; forming a broad round-topped crown; leaves broadly oval, dark green above and pale green beneath; flowers creamy white and very fragrant. Suitable for avenues, lawns or parks. Ranks high as a source of honey for bees. Suitable for coast climate. EACH 10
10 to 12 ft. \$2 00 \$15 00
8 to 10 ft. 1 50 12 50
6 to 8 ft. 1 25 10 00

European or Lime Tree (*T. europaea*). 90 feet. A very fine, pyramidal tree, with symmetrical round-topped crown, leaves obliquely heart-shaped, bright green, fading in autumn to tones of yellow and brown; a handsome street or avenue tree. EACH 10
6 to 8 ft. \$0 75 \$6 00
4 to 6 ft. 60 5 00

LOCUST (*Robinia pseudacacia*). Eastern U. S. Adapt themselves to almost any soil conditions. Wood of the larger growing varieties is very hard and durable; valuable for posts and railroad ties. Varieties bloom from early spring till summer. EACH 10 100
12 to 15 ft. \$1 50 \$12 50 \$100 00
10 to 12 ft. 1 25 10 00 75 00
8 to 10 ft. 1 00 7 50 60 00
6 to 8 ft. 75 6 00 50 00

Except Pink Flowering and Rose Flowering.

Black (*R. pseudacacia*). 80 feet. A good timber tree of very rapid growth. Flowers white.

Ever-Flowering (*R. P. semperflorens*). 60 feet. Medium-growing variety, producing an abundance of white flowers all summer.

Thornless (*R. P. inermis*). 40 feet. Of medium growth, with large, dark green leaves; thornless.

Umbrella (*R. P. bessoniana*). 40 feet. The most ornamental locust, with compact, round head, making a fine shade tree; nearly thornless.

SPECIAL VARIETIES OF LOCUST

Pink-Flowering (*R. P. decaisneana*). 60 feet. A vigorous straggling grower with pink flowers; very ornamental.

Rose-Flowering (*R. hispida*). 12 feet. Dwarf-growing, bristling branches; beautiful rose-colored flowers appearing all summer. Extra fine for ornamentation among shrubbery. EACH 10
8 to 10 ft. \$1 50 \$12 50
6 to 8 ft. 1 25 10 00

MAIDENHAIR TREE, (*Salisburia adiantifolia*) (*Ginkgo*), 60 feet. This strange species is said to be of great antiquity. It is the leading avenue tree in Washington, D. C. It does best in a deep moist soil and in a comparatively cool or warm damp climate. Is not suited to hot dry atmospheres. Its unique and striking appearance as a single specimen or avenue tree, should cause it to be generally planted where conditions are favorable for its development. EACH
4 to 6 ft. \$1 00
3 to 4 ft. 75

MAGNOLIA. These highly ornamental medium sized trees with their rich and brilliant foliage, and their lavish display of fragrant many hued flowers, are worthy of a place in every garden of any size. Planted in groups, their effect in the early spring with their brilliant colorings and their rich fragrance is grand beyond description. Striking flowering effects will repay additional expense for protecting until they reach their blooming period in hot dry climates as they are subject to sunburn.

Chinese White (*M. conspicua*), 20 feet. A very free bloomer with fragrant large, white flowers. EACH
3 to 4 ft. \$1 50
2 to 3 ft. 1 25

Cucumber tree (*M. acuminata*). 90 feet. A majestic, pyramidal-growing tree, with large conspicuous leaves and yellowish-white flowers; fruit, when green, resembling a cucumber, hence the name. EACH
4 to 6 ft. \$1 00
3 to 4 ft. 75

Fragrant (*M. salicifolia*), Japan, 20 ft. Resembles Kobus but is a heavier bloomer with narrower leaves. It emits a sweet aromatic scent from the bark and wood as well as from the flowers. EACH
1 to 1½ ft. \$1 25

Japanese (*M. kobus*), 20 feet. Flowers white, reverse of petals light pink; very hardy. EACH
1 to 1½ ft. \$0 75

Starry (*M. stellata*), 12 feet. Dwarf species, producing starry-shaped pure white flowers. EACH
1½ to 2 ft. \$2 00

MAPLE (*Acer*). Valuable trees for street and park planting. The foliage assumes handsome autumnal tints.

	EACH	10	100
12 to 15 ft.	\$1 50	\$12 50	\$100 00
10 to 12 ft.	1 25	10 00	75 00
8 to 10 ft.	1 00	7 50	60 00
6 to 8 ft.	75	6 00	50 00
4 to 6 ft.	60	5 00	40 00

Except Reitenbach and Schwedler's Purple.

See Special Price.

Ash-Leaved or Box Elder (*A. negundo*), California. 70 feet. A fine, rapid-growing avenue tree; withstands both cold and drought.

English Cork Bark (*A. campestri*), 60 feet. Stocky tree of compact habit with rough corky bark. A good variety for the interior.

Norway (*A. platanoides*), 100 feet. Large and handsome; deep green foliage and compact growth. A valuable tree for interior valleys.

Silver or Soft (*A. dasycarpum*), Eastern N. America, 120 feet. A large tree of rapid growth; foliage bright green above, silvery beneath. A favorite for streets and parks; grows well in interior valleys.

Sugar (*A. saccharum*), Eastern N. America, 100 feet. A fine shade tree; valuable for production of sugar and timber. Not suited to hot climates.

Sycamore (*A. pseudo-platanus*), Europe, 70 feet. A rapid, upright growing tree, with bright green foliage. Fine for streets and avenues, doing well in this valley.

SPECIAL VARIETIES OF MAPLE

Reitenbach's Purple (*A. platanoides reitenbachi*), Europe, 50 feet. Foliage a beautiful greenish red in the spring, changing to purple in mid-summer and to blood-red in the autumn.

Schwedler's Purple (*A. platanoides schwedleri*), 50 feet. A vigorous grower, with large, bronzy red leaves, and young shoots of same color. EACH
4 to 6 ft. \$1 25

MOUNTAIN ASH, EUROPEAN, (*Sorbus aucuparia*), 60 feet. These very ornamental trees all have handsome foliage turning orange-red in the fall. White flowers followed by scarlet berries which often remain on the branches all winter. EACH
4 to 6 ft. \$1 00



Acer platanoides—
Norway
Maple.
Hand-
some
Compact
Growing
Park or
Street
Tree.

MULBERRY (Morus). Rapid, dense-growing trees; popular for planting in hog pastures and chicken yards. A few trees planted near a cherry orchard act as a protection from birds.

10 to 12 ft.	EACH	\$1 25
8 to 10 ft.	EACH	1 00

Except Persian and Chinese. See Special Price.

Lick's American (M. rubra), 60 feet. Fruit large, black and of exquisite flavor; tree a strong, thrifty grower.

New American (M. rubra), 60 feet. A vigorous grower, with fine, large leaves and producing, large, black fruit.

Russian (M. alba tatarica), 50 feet. Of spreading habit and rapid growth. Valuable for timber. Used for windbreaks. A Russian variety of great hardiness.

SPECIAL VARIETIES OF MULBERRY

Persian (M. nigra), 25 feet. A slow growing variety. Produces largest and finest fruit of all mulberries. Fruit black 1½ inches long, aromatic with sub-acid flavor. Ripens June to October.

6 to 8 ft.	EACH	\$1 25
4 to 6 ft.	EACH	1 00

Chinese (M. multicaulis), 30 feet. Strong growing small tree. Planted principally for silkworm culture.

12 to 15 ft.	EACH	\$1 25	10	\$10 00	\$75 00
10 to 12 ft.	EACH	1 00	7 50	60 00	
8 to 10 ft.	EACH	75	6 00	50 00	
6 to 8 ft.	EACH	60	5 00	40 00	



Populus balsamifera candicans.

Balm of Gilead Poplar—Rapid Growing Street Tree.

See Page 60.

OAK (Quercus). This grand family of trees noted for their great longevity comprises a vast assortment of varieties. Our selection consists of the very best sorts suited to the climatic conditions of California. Although of slow growth, they are desirable for planting as single specimens, also to bring out the best results in landscape effects planned on a large scale.

8 to 10 ft.	EACH	\$1 25	10	\$10 00
6 to 8 ft.	EACH	1 00	7 50	
4 to 6 ft.	EACH	75	6 00	
3 to 4 ft.	EACH	60	5 00	

Except Valley or Weeping

English (Q. pedunculata), 100 feet. Of low, spreading growth; leaves dark green, fading to yellow and russet; brown in autumn.

Pin (Q. palustris), N. America, 50 feet. One of the most graceful and shapely trees for avenue planting.

Pyramidal (Q. pedunculata fastigiata), 80 feet. A handsome tree, with erect, pyramidal branches and deep, dark green foliage resembling Lombardy Poplar in habit.

Red American (Q. rubra), 80 to 120 feet. An American species of large size and rapid growth; leaves 7 to 9 lobed, the divisions bearing bristle-tipped teeth, rosy-pink at unfolding, dark dull green at maturity, turning orange and brown in autumn; acorns very large. A grand specimen or street tree and one of the most rapid-growing oaks.

SPECIAL VARIETY OF OAK

Scarlet (Q. coccinea), N. America, 50 feet. A rapid-growing, pyramidal tree; beautiful in the autumn, when the foliage changes to a bright scarlet.

Turkey (Q. cerris), S. Europe, 50 feet. A rapid, symmetrical grower; short, spreading branches, forming a broad, pyramidal head.

Valley or Weeping Oak (Q. lobata), 100 feet. One of the great and striking trees of California, with wide-spreading and slender drooping branches. Grows most luxuriantly in open fertile valleys, giving the country a park-like appearance.

Potted, 3 to 4 ft.	EACH	\$1 00	10	\$7 50
Potted, 2 to 3 ft.	EACH	75	6 00	

PAGODA TREE (Sophora japonica), 40 feet. A rare tree with dark green, compound leaves and creamy yellow, pea-shaped flowers. Thrives well in interior valleys. Flowers all summer; valuable where bees are kept.

10 to 12 ft.	EACH	\$1 25	10	\$10 00
8 to 10 ft.	EACH	1 00	7 50	
6 to 8 ft.	EACH	75	6 00	

PAPER MULBERRY (Broussonetia papyrifera), 40 feet. A fine tree for city streets; of rapid growth and forming a compact head. Remarkable for its cylindrical catkins, followed by round fruits covered with small red seeds not edible.

12 to 15 ft.	EACH	\$1 75	10	\$15 00
10 to 12 ft.	EACH	1 50	12 50	
8 to 10 ft.	EACH	1 25	10 00	

PARASOL TREE (Sterculia platanifolia), Japan, 40 feet. A splendid, thrifty tree with large, maple-like leaves and greenish-white flowers, followed by curious pod-like fruits. A fine street or lawn tree.

4 to 6 ft.	EACH	\$0 75	10	\$6 00
3 to 4 ft.	EACH	60	5 00	

PEACH, FLOWERING, They blossom in April, and the branches are covered with a mass of beautiful colored flowers, long before the leaves appear.

4 to 6 ft.	EACH	\$0 75	10	\$6 00
3 to 4 ft.	EACH	60	5 00	

Blood-Leaved, 15 feet. Foliage of a deep, blood-red color.

Double Red-Flowered, 15 feet. Flowers semi-double, bright red, superb.

Double Rose-Fringed, 15 feet. Flowers double, fringed and rose-colored.

Double White, 15 feet. Flower large, double, pure white.

PLUM (Prunus). Medium-sized trees, used very effectively in grouping with other trees and shrubs.

Purple-Leaved (P. pissardi), Persia, 20 feet. Wood and leaves dark purple.

6 to 8 ft.	EACH	\$1 00	10	\$7 50
4 to 6 ft.	EACH	75	6 00	



Prunus—Vesuvius Plum. Beautiful Purple-leaved Tree of the Graceful Form of the Elm.

Vesuvius (New). A foliage tree like the Purple-Leaved Plum but vastly superior to it. A much more vigorous grower; branches inclined to droop; foliage very large, with a very much crumpled surface with a pronounced crimson color intermingled with a lustrous green.

6 to 8 ft.	EACH	\$1 25	10	\$10 00
4 to 6 ft.	EACH	1 00	7 50	

POPLAR (Populus). Poplars are very rapid growing trees and thrive under a great variety of conditions. Their leaves are bright among other trees of heavier foliage. They are well adapted for streets, avenues and windbreaks. Where quick shade is desired these trees serve the purpose. They do not bear the objectionable cottony seed.

	EACH	10	100
15 to 18 ft.....	\$1 50	\$12 50	\$100 00
12 to 15 ft.....	1 25	10 00	75 00
10 to 12 ft.....	1 00	7 50	60 00
8 to 10 ft.....	75	6 00	50 00
6 to 8 ft.....	60	5 00	40 00

Balm of Gilead (P. balsamifera candicans), N. America, 80 feet. A handsome, tall tree with spreading branches. Most popular variety for shade and avenue planting.

Balsam (P. balsamifera), N. America, 60 feet. A tall tree with erect branches forming a narrow, pyramidal head. Often planted for the delightful resiniferous odor of the buds.

Bolles' Silver (P. alba bolleana), 100 feet. Very compact, upright grower with glossy leaves, green above and silvery beneath.

Carolina (P. deltoides carolinensis), Europe, 60 feet. Very rapid grower. Valuable for avenue planting.

Giant-Leaved (P. angulato cordata robusta), Europe, 120 feet. Resembles Carolina, but is a more robust grower and has larger leaves.

Golden (P. aurea van geerti), 40 feet. Has fine golden yellow foliage.

Lombardy (P. nigra italica), 120 feet. Erect growing tree, with a tall, spiry-like form.

SERVICE TREE (Sorbus domestica), Europe, 30 feet. A round headed tree. White flowers. Small apple-shaped yellowish fruit with orange or red cheek.

	EACH	10
6 to 8 ft.....	\$0 90	\$7 50
4 to 6 ft.....	75	6 00

SIBERIAN PEA TREE (Caragana arborescens), Siberia, 20 feet. Very ornamental; flowers yellow; leaves abruptly pinnate; tree of medium growth.

	EACH	10
4 to 6 ft.....	\$0 75	

SWEET or STAR-LEAVED GUM. BILSTED (Liquidambar styraciflua), Eastern U. S., 80 feet. An elegant tree resembling the Maple; leaves star-shaped and of a beautiful glossy green color in the summer, changing in autumn to bright red. A beautiful tree at all stages.

	EACH	10
4 to 6 ft.....	\$1 25	\$10 00
3 to 4 ft.....	1 00	7 50

SYCAMORE (Platanus). Plane Tree. In great demand for shade and avenue planting; a rapid, symmetrical grower, thriving in almost any soil. Planted largely along California highways.

	EACH	10	100
12 to 15 ft.....	\$1 50	\$12 50	\$100 00
10 to 12 ft.....	1 25	10 00	75 00
8 to 10 ft.....	1 00	8 00	70 00
6 to 8 ft.....	80	7 00	60 00



Platanus orientalis.

European Sycamore—The Best Tree for Street and Avenue. Planted Along Highways in many Counties.



Melia—Texas Umbrella. A well-known Tree of Striking Beauty.

American (P. occidentalis), 100 feet. American Plane or Buttonwood. A well-known, spreading tree, common throughout the United States.

European (P. orientalis), 100 feet. Erect-growing tree, with bright green foliage and beautifully mottled trunk. Regarded as one of the best street trees for California.

TEXAS UMBRELLA (Melia azedarach umbraculiformis), S. Asia, 40 feet. One of the handsomest shade trees of umbrella form; shade very dense; foliage dark green; produces lilac-colored flowers.

	EACH	10	100
12 to 15 ft.....	\$1 50	\$12 50	\$100 00
10 to 12 ft.....	1 25	10 00	75 00
8 to 10 ft.....	1 00	7 50	60 00
6 to 8 ft.....	75	6 00	50 00
4 to 6 ft.....	60	5 00	40 00

THORN (Crataegus), Europe. Grow in almost any soil; abundant flowers in spring, are followed by showy fruits in fall.

	EACH	10
8 to 10 ft.....	\$1 25	\$10 00
6 to 8 ft.....	1 00	7 50

Except Carrier's White

Double Scarlet (C. oxyacantha paulii), 12 feet. Small tree, with spreading branches. Flowers of a deep crimson.

Double White (C. oxyacantha alba pleno), 12 ft. Small, double, white flowers and lustrous green leaves.

Single Pink (C. oxyacantha punicea), 15 feet. Flowers in clusters, single, varying in color from pink to rose.

Carrier's White (C. azarolus carrierei), Asia Minor, 25 feet. A new variety with exceptionally large foliage, deeply ribbed and of a glossy green color; flowers large white; fruit scarlet, large as cherries, very abundant and hanging on the trees all winter.

	EACH	10
6 to 8 ft.....	\$2 25	

TULIP (Liriodendron tulipifera), Eastern U. S., 100 feet. A magnificent rapid growing tree of tall pyramidal habit, with light green, glossy, fiddle shaped leaves, and greenish yellow tulip like flowers.

	EACH	10
6 to 8 ft.....	\$1 00	
4 to 6 ft.....	75	\$6 00
3 to 4 ft.....	60	5 00

VARNISH TREE (Kolreuteria paniculata), Japan, 30 feet. Small tree; glossy divided foliage; yellow flowers. Fine for lawns. Stands drouth and heat well.

	EACH	10
8 to 10 ft.....	\$1 00	\$7 50
6 to 8 ft.....	75	6 00
4 to 6 ft.....	60	5 00

WALNUT (Juglans). Cut-leaved, American Black and California Black. See page 27.

WILLOW, GOLDEN (Salix vitellina aurea) N. E. America, 30 feet. A handsome tree, conspicuous at all seasons and particularly in the spring, when the branches are of a golden yellow. Becomes a very large and venerable tree.

	EACH	10
3 to 4 ft.....	\$0 50	\$4 00

Osier (S. viminalis), Europe, 20 feet. Branches slender and straight. Valuable for basket making.

	EACH	10
3 to 4 ft.....	\$0 50	\$4 00

WEeping DECIDUOUS TREES

The weeping trees stand in a class by themselves and are particularly effective when used as specimens on a lawn or when grouped along the outer edges of larger-growing trees. They are budded or grafted on straight stems of the same species at a height of 6 to 8 feet from the ground.

BIRCH, CUT-LEAVED, WEEPING (*Betula alba pendula laciniata*), Europe, 75 feet. Has a silvery white bark and slender, drooping branches with deeply lacinated foliage.

6 to 8 ft. EACH \$2 00

ELM CAMPERDOWN WEEPING (*Ulmus scabra pendula*), 20 feet. Vigorous branches, having a uniform weeping habit, over-lapping very regularly and forming a roof-like head; the leaves are large, dark green and glossy, and cover the tree with a luxuriant mass of verdure.

6 to 8 ft., 2-yr. heads EACH \$2 00 \$12 50

LOCUST HISPIDA (*Robinia hispida pendula*) (Top-grafted). 20 feet. Weeping type of the Rose-Flowering Locust, top-worked at 6 feet on the Common or Black Locust.

8 to 10 ft. EACH \$2 00
6 to 8 ft. \$1 50

MAPLE, WIER'S CUT-LEAVED (*Acer saccharinum wierii laciniatum*), 75 feet. One of the most beautiful trees with cut or dissected foliage. Of rapid growth, with slender drooping shoots. The foliage is silvery underneath, the leaf stalks are long and tinted with red. It ranks among the most interesting and attractive of lawn trees.

6 to 8 ft. EACH \$1 50 \$12 50
4 to 6 ft. 1 25 10 00

MULBERRY, TEAS WEEPING (*Morus alba tatarica pendula*), 15 feet. A very graceful weeping tree, with long, slender branches, drooping to the ground, parallel to the stem; one of the most graceful and vigorous of weeping trees.

6 to 8 ft., 3-yr. heads EACH \$2 50 \$20 00
6 to 8 ft., 2-yr. heads 2 00 15 00

PAGODA TREE, WEEPING (*Sophora japonica pendula*), 15 feet. A beautiful weeping tree of very regular and graceful habit. Its small stature, trailing branches reaching to the ground combined with the deep dark green, glossy leaves, makes it add much to the appearance of a small garden or lawn.

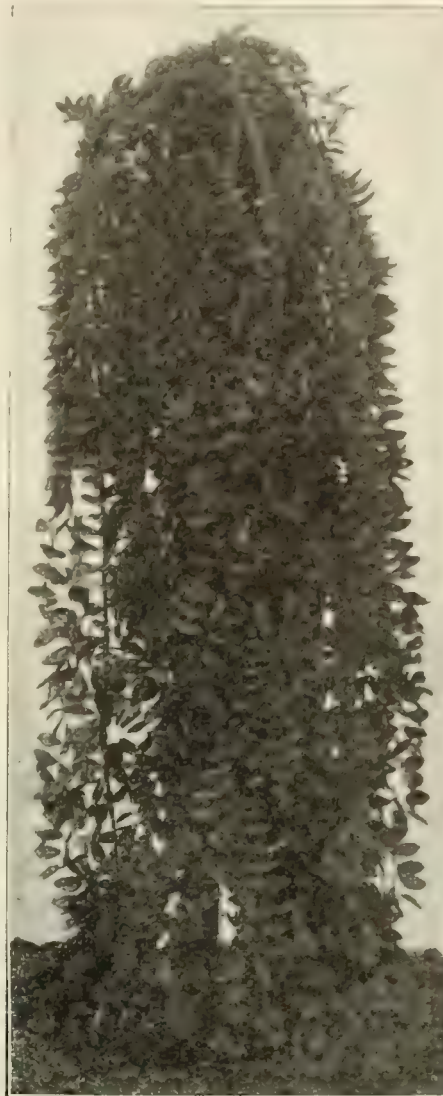
6 to 8 ft., 2-yr. heads EACH \$2 00 \$15 00

WALNUT (*Juglans regia pendula*), 15 feet. This is one of the most beautiful of the weeping trees. It is grafted on California Black Walnut 6 feet from the ground. In addition to its beauty as an ornamental tree, it produces very fine, large, thin-shelled English Walnuts.

6 to 8 ft., 3-yr. head, extra heavy \$3 00 \$25 00
6 to 8 ft., 2-yr. head 2 50 20 00



Ulmus scabra pendula—Camperdown Weeping Elm. A Picturesque Lawn Tree.



Sophora japonica pendula—Pagoda Tree, Weeping. A Very Graceful Lawn Tree.

WILLOW (*Salix*). Most rapid growing weeping tree, particularly adapted to moist locations.

Baron de Solomon, 40 feet. The most rapid growing of all Weeping Willows. Very recent introduction.

Common (*S. babylonica*), Asia, 30 feet. The well-known Weeping Willow.

New American (*S. babylonica dolorosa*), 50 feet. Large, glossy leaves and very pendulous habit.

Osier Willow (*S. viminalis*). Europe and Asia. 12 to 20 feet. A low growing tree and valuable for basket material, and for tying. When used for this purpose the main body of the tree should not be over six feet high and cut to spurs every winter.

	EACH	10	100
12 to 15 ft.	\$1 50	\$12 50	\$100 00
10 to 12 ft.	1 25	10 00	80 00
8 to 10 ft.	1 00	8 00	70 00
6 to 8 ft.	75	6 00	50 00
4 to 6 ft.	60	5 00	40 00

DECIDUOUS SHRUBS

The term shrubbery is usually applied to woody plants of comparatively small size. The line of distinction is difficult to draw, but a shrub has as a rule, a number of stems springing from the ground while a tree has a single stem. Interspersed among larger trees, many varieties when in flower give life to a landscape effect. In grouping shrubs, have the taller growing kinds serve as a background to the lower growing kinds. The ultimate effect of the grouping should be to have a continuous mass of varying foliage. As a boundary or screen for dividing fields or hiding unsightly fences, or for a background for flower gardens, they are unsurpassed.

ALTHEA, or ROSE of SHARON (*Hibiscus syriacus*), Asia, 12 feet. Of the easiest cultivation and with large, delicately

hued, bell-shaped flowers appearing very profusely during the summer months.

4 to 5 ft. EACH \$0 50 \$4 00

Snow Drift (*Hibiscus*). EACH 10
8-inch box 3 to 4 ft. \$0 75 \$6 00

APPLE, FLOWERING CRAB. 8 to 10 feet. Low growing trees or large free flowering shrubs admirably adapted to lend color to shrub borders. Very handsome and effective.

4 to 6 ft. EACH \$0 75

APPLE—Continued Page 62.

APPLE, FLOWERING CRAB—Continued**Chinese Double Rose.** Double rose.**Chinese Double White.** Double white.**Flowering.** Single carmine and white.**Single White.** Single white and pink.

ANGELICA TREE (*Aralia japonica*), China, 30 feet. Resembles *Aralia spinosa*, but much hardier. EACH 10
 8 to 10 ft. \$1 50 \$12 50
 6 to 8 ft. 1 00 7 50
 4 to 6 ft. 75 6 00

Hercules Club (*A. spinosa*), Eastern U. S., 30 feet. A fine native variety, with large, doubly and triply pinnated leaves and large clusters of flowers. EACH 10
 6 to 8 ft. \$1 25 \$10 00
 4 to 6 ft. 1 00 7 50

BARBERRY, (*Berberis vulgaris*), Europe, 8 feet. Handsome distinct foliage and yellow flowers, succeeded by red berries.

Purple-Leaved (*B. V. atropurpurea*), 8 feet. A pretty shrub with purple foliage. EACH 10
 4 to 6 ft. \$0 75 \$6 00
 3 to 4 ft. 60 5 00

BIRD OF PARADISE (*Poinciana gilliesii*), S. America, 8 feet. Adapts itself to the poorest soils. Flowers light yellow pea-shaped, 2 inches long, with brilliant, protruding, red stamens, appearing all summer. EACH 10
 Potted, 3 to 4 ft. \$1 00 \$7 50



**Xanthoceras
sorbifolia—
Chinese Flowering
Chestnut.
Blooms in
Early Spring.**

CHERRY, FLOWERING (*Cerasus*), 10 feet. This is a very ornamental family of shrubs or small trees. They are especially well adapted for beautifying small grounds. The beautiful tinting of the flowers combined with their very effective appearance pushing out long before the leaves appear, makes them particularly desirable as early spring flowering plants.

	EACH	10
4 to 5 ft.	\$0 75	\$6 00
3 to 4 ft.	60	5 00

Japanese Flowering (*C. hortensis*), 10 feet. Famous flowering cherry from Japan so often portrayed in Japanese scenes. The flowers are large, pink to bluish, opening just as leaves expand.

Japanese Double Flowering (*C. hortensis rosea pleno*), 10 feet. Similar to the above; flowers in immense clusters like roses; very double.

Japanese Double White (*C. japonica alba pleno*), 10 feet. A fine sort, with double white flowers.



Cerasus—Flowering Cherry. Flowers Completely Cover Tree in Early Spring.

CHESTNUT, CHINESE FLOWERING (*Xanthoceras sorbifolia*), China, 15 feet. A tree of small stature with pinnate leaves like the Mountain Ash; flowers white, with red streaks about the base of the petals, appearing at the same time that the leaves push out in April.

	EACH
3 to 4 ft.	\$0 75
2 to 3 ft.	60

CORAL PLANT (*Erythrina crista-galli*), Brazil, 10 feet. The flowers are bright brilliant crimson color, like immense peas. Flowers profusely from early spring till late in fall. A grand flowering shrub. EACH 10

Potted, 1½ to 2 ft.	\$0 50	\$4 00
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Cockscomb (*E. corralodendron*), West Indies, 10 feet. A very rare and striking shrub. Large deep scarlet flowers borne in long racemes after the leaves fall. EACH

Potted, 2 to 3 ft.	\$1 25
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CRAPE MYRTLE (*Lagerstroemia*), China. This very strong growing shrub, adapts itself to almost any soil condition. The leaves are bright green, the flowers with their pretty curiously crimped petals, are produced in very large panicles at the ends of the branches during the entire summer.

Purple (*L. indica purpurea*), 12 feet. A very free bloomer; flowers purple; a most desirable shrub for grouping; very rapid grower. EACH 10

4 to 6 ft.	\$0 75	\$6 00
3 to 4 ft.	60	5 00
Potted, 1 to 1½ ft.	40	3 00

White (*L. indica alba*), Asia, 8 feet. A very rare and beautiful shrub with leaves ovate, dark lustrous green. Flowers very much crimped, pure white, and ruffled. Seems to be exceptionally well adapted to our interior climates. EACH

Potted.	\$1 00
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DEUTZIA, Japan. A very attractive, free-flowering shrub with long flower racemes. EACH 10

4 to 6 ft.	\$0 75	\$6 00
3 to 4 ft.	60	5 00

Double White (*D. crenata candidissima*), 8 feet. Flowers double; pure white.

Pink (*D. gracilis rosea*), 4 feet. Dwarf; flowers light rose.

DOGWOOD (*Cornus sanguinea*). European Red Osier. 10 to 12 feet. A native of Europe. A spreading shrub with deep red, purplish branches and greenish white flowers, in dense flat-topped clusters, followed by black berries. EACH 10 100

4 to 6 ft.	\$0 60	5 00	40 00
3 to 4 ft.	50	4 00	30 00

ELDER (*Sambucus*), England. These are showy, large shrubs, quite ornamental in flowers, fruit and foliage; they blossom in June; very desirable for grouping.

	EACH	10
6 to 8 ft.	\$0 75	\$6 00
4 to 6 ft.	60	5 00

Cut-Leaved (*S. nigra laciniata*), 10 feet. Foliage dark green and deeply cut.

ELDER—Continued Page 63.



Viburnum—Snowball. Well-known Shrub Bearing Clusters of White Flowers in Late Spring. See Page 64.

ELDER—Continued.

Silver Variegated (*S. nigra argentea*), 10 feet. Leaves edged silvery white.

EVONYMUS, EUROPAEUS (Strawberry or Spindle Tree), 20 feet. A small tree or shrub bearing medium-sized, scarlet berries. EACH 10
6 to 8 ft. \$0 60 \$5 00

Alatus, A fine spreading variety with yellowish flowers. EACH 10
Potted 1½ to 2 ft. \$0 75 \$6 00

GOLDEN BELL (*Forsythia suspensa*), China. Drooping (*F. suspensa*), 6 feet. Foliage deep green; flowers bright yellow; branches slender, drooping.

Fortune (*F. suspensa fortunei*), 10 feet. Similar to the preceding, but of more vigorous, upright growth.

Viridissima, 10 feet. An upright grower with narrow, dark green leaves and golden yellow flowers. EACH 10
4 to 6 ft. \$0 75 \$6 00
3 to 4 ft. 60 5 00

HYDRANGEA, Japan, 4 feet. There is nothing so effective as the Hydrangea for grouping. Their luxuriant foliage and rich, delicate flower globes render them very attractive. The prices of the following plants are regulated by the number of branches rather than by their height.

Avalanche. Large heads of pure white flowers. EACH
Potted, 12 to 15 inches. \$1 00

Bouquet Rose. Flowers rosy pink. EACH
Potted, 12 to 15 inches. \$1 00

Giant Flowered (*Otaksa*). Immense blooms of a pleasing shade of pink; heads 12 to 15 inches in diameter not uncommon. EACH
Pots and boxes, 12 to 18 inches. \$1 25

Hortensis. Has large, dark green leaves and globular heads of rose-colored flowers. EACH
Pots and boxes, 12 to 18 inches. \$1 00

Paniculata Grandiflora. 8 feet. A distinct variety producing pure white flowers. Very hardy. Bare roots. EACH 10
1½ to 2 ft. \$0 50 \$4 00

Thomas Hogg. One of the hardiest; flowers pure white; profuse bloomer. EACH
Potted, 12 to 18 inches. \$1 00

KERRIA, WHITE (*Rhodotypos kerrioides*), Japan, 6 feet. Has deeply veined leaves and white flowers, followed by small, black berries. EACH
4 to 6 ft. \$0 60

LEMON VERBENA (*Lippia citriodora*), S. America, 6 feet. The old-fashioned favorite shrub, with long, narrow, pointed leaves, which emit a delightful fragrance. EACH 10
4 to 6 ft. \$0 60 \$5 00
3 to 4 ft. 50 4 00

LILAC (*Syringa*), Europe.

Common Purple (*Syringa vulgaris*), 8 feet. An old favorite; very fragrant.

Common White (*S. vulgaris alba*), 8 feet. Similar to preceding with white flowers. EACH 10
3 to 4 ft. \$0 60 \$5 00
2 to 3 ft. 50 4 00

Grafted and Budded Varieties

3 to 4 ft. EACH 10
2 to 3 ft. \$0 75 \$6 00
60 5 00

Charles X. Reddish purple, single, 8 feet.

Mad. C. Perriere. Double white, 8 feet.

Marie Legraye. Pure white, single, 8 feet.

Michel Buchner. Pale lilac, double, 8 feet.

MOCK ORANGE (*Philadelphus*). Very vigorous with handsome foliage; flowers white, with orange-blossom fragrance. EACH 10
4 to 6 ft. \$0 75 \$6 00
3 to 4 ft. 60 5 00
2 to 3 ft. 50 4 00

Garland Syringa (*P. coronarius*), Europe, 10 feet. Flowers pure white, delightful orange-blossom fragrance; one of first to bloom.

Large Flowered (*P. grandiflorus*), Southeastern U.S., 10 feet. Slender, twiggy habit, with fragrant flowers.

PEONY TREE (*Paeonia moutan*), China, 6 feet. These beautiful flowering shrubs bloom in April and are among the best flowering shrubs. Positions for planting should be selected where the influence of the sun's rays are not felt until late in the morning. The flowers are enormous in size. They range in colors through red, pink, purple and white. EACH 7-inch boxes \$2 00

POMEGRANATE (*Punica*), S. Asia. A particularly fine shrub for California. Flowers all through the summer season followed by brilliant showy fruits. Foliage glossy and handsome with ruddy tints on new growth. EACH 10
4 to 6 ft. \$0 75 \$6 00
3 to 4 ft. 60 5 00
2 to 3 ft. 50 4 00

Except Dwarf Varieties. See Price

Double Scarlet (*Punica rubra*), 15 feet. Rapid-growing shrubs; flowers deep, double scarlet.

Double White (*P. alba*), 12 feet. Flowers double, creamy white.

Mme. Legrelle (*P. legrellei*), 15 feet. Very fine, large, scarlet flowers, edged with yellow.

Dwarf Pomegranates

Dwarf Scarlet (*P. nana rubra*), 4 feet. Very rare. A handsome small shrub with beautiful double scarlet flowers; fruits brilliant red, very showy, but not fit to be eaten.

Dwarf White (*P. nana alba*), 4 feet. Very similar in habit to the preceding; flowers are double, yellowish white. EACH 10
Potted, 2 to 3 ft. \$0 75 \$6 00
Potted, 1 to 1½ ft. 60 5 00

PRIVET (*Ligustrum*). Fine, rapid-growing shrubs; good for hedges, or for training as specimens.

California (*L. ovalifolium*), Japan, 15 feet. A pyramidal shrub with bright green, narrow, leaves; producing white flowers in June. EACH 10 100
Bare roots, 4 to 6 ft. \$0 60 \$5 00 \$35 00
Bare roots, 3 to 4 ft. 50 4 00 30 00
Bare roots, 2 to 3 ft. 40 3 50 25 00

Ciliatum, Japan, 6 feet. Dwarf, dense shrub, with short, rigid branches; leaves dense, glossy, dark green, leathery; flowers white, in erect, compact clusters. EACH 10
Boxed, 2 to 3 ft. \$0 75 \$6 00
Bare roots, 2 to 3 ft. 50 4 00
Potted, 1½ to 2 ft. 40 3 50

Ciliatum Variegated. Japan. 6 feet. Dwarf, dense shrub with short rigid branches—leaves dense, glossy, dark green with white variations. Flowers, white in compact clusters. EACH 10
Bare roots, 3 to 4 ft. \$0 75 \$6 00
Bare roots, 2 to 3 ft. 60 5 00



Lagerstroemia—Crape Myrtle. Blooms During Entire Summer. See Page 62.

QUINCE (*Cydonia*), Japan, 6 feet. The Japanese Quince is a beautiful dwarf species, remarkable for the brilliancy of its blossoms, which vary from the richest scarlet to the most delicate blush color. They are well adapted for single plants, on the lawn; for the edges or borders of groups of trees and for planting ornamental hedges. The foliage is very ornamental. The fruit has a delicious fragrance but is worthless.

	EACH	10	100
4 to 6 ft.....	\$0 75	\$6 00	\$50 00
3 to 4 ft.....	60	5 00	40 00
2 to 3 ft.....	50	4 00	30 00

Crimson. Flowers brilliant red, succeeded by large showy fruits.

Japan White. Flowers white or delicate blush.

Red Flowering. Deep red.

Rose Flowering. Semi double rose.

Scarlet. Single deep crimson.

Single White. Very large white flower.

SMOKE TREE (*Rhus cotinus*), Europe, 15 feet. A low-growing, shrubby tree, with clusters of feathery, pale purple flowers, giving the appearance of a cloud of smoke.

	EACH	10	100
8 to 10 ft.....	\$1 75		
6 to 8 ft.....	1 50		
4 to 6 ft.....	75		

SNOWBALL (*Viburnum*). Very attractive, free-flowering shrubs.

	EACH	10	100
2 to 3 ft.....	\$0 50	\$5 00	

Common (*V. opulus sterilis*), N. America, 6 feet. Produces an abundance of pure white, globular flowers in May and June.

Japanese (*V. tomentosum plicatum*), Japan, 6 feet. Flowers pure, delicate white, in large, globular heads, appearing in May.

	EACH	10	100
2 to 3 ft.....	\$1 00		

SNOWBERRY (*Symphoricarpos racemosus*), Eastern U. S., 5 feet. Has small pink flowers and large white berries which hang in clusters the greater part of the winter.

Coral Berry (*S. vulgaris*). Indian Currant. 2 to 4 ft. A shrub of very pretty habit. Leaves bright green and tinged with reddish purple when young. Flowers greenish red, fruit purple, hangs all winter.

Rubrum, 3 feet. Similar to *Racemosus* except berries are red.

	EACH	10	100
2 to 3 ft.....	\$0 50	\$4 00	

SPIREA (*Spiraea*), 3 to 6 feet. Medium-sized shrubs, embracing a wide range of growth, color of flowers and season of blooming. Of easy culture.

	EACH	10	100
3 to 4 ft.....	\$0 50	\$4 00	
2 to 3 ft.....	40	3 00	
1 to 1½ ft.....	30	2 50	

Except Anthony Waterer. See Price.

Billards (*S. billardii alba*). White flowers in dense spikes, blooms nearly all summer.

Bridal Wreath (*S. prunifolia flore pleno*). Well-known. Graceful, arching branches and round clusters of white flowers. Blooms in May.

Van Houtte's (*S. van houttei*). Similar to the Bridal Wreath, but of far more graceful habit. Flowers single. Blooms in April.

Anthony Waterer (*S. bumalda*), 3 feet. New. A strong grower; a free bloomer; an ideal pot-plant; a grand Spirea.

	EACH	10	100
1½ to 2 ft.....	\$0 50	\$4 00	

SUMACH (*Rhus glabra*). U. S. 10 to 12 feet. A shrub or small tree with an open crown, with compound leaves, dark green above, whitened beneath, turning brilliant scarlet in autumn. Very effective in autumn with its crimson seeds and foliage.

Cut-Leaved (*R. glabra laciniata*). 12 feet. A very striking plant. Leaves very large, deeply cut, and drooping gracefully from the branches, and turning to a rich red in autumn.

	EACH	10	100
4 to 6 ft.....	\$0 75	\$6 00	
3 to 4 ft.....	60	5 00	

EVERGREEN TREES

Under this head are associated the trees which do not shed all their foliage at one time, thereby remaining green, although the old leaves do shed from time to time as they become overshadowed or crowded out by the younger foliage. It is the evergreen tree which has done so much to enliven the landscape of California during the winter months.

All stock quoted in tubs, cement pots and boxes are specimens which have been well established in their containers.

It often happens we have an assortment of large sizes in specimen plants on which it is difficult to make quotations in this list. We invite correspondence relative to same or personal inspection when convenient.

ACACIAS. Although there are some 400 species of Acacia, we have confined ourselves to varieties of well-known merit, the uses of which are enumerated below. The Acacia finds the most favorable conditions to its development in California. Nearly all of them have their origin in Australia.

Armata (*Kangaroo Thorn*). 10 feet. A spreading shrub, with yellow flowers; excellent for grouping

	EACH	10	100
Potted, 4 to 6 ft.....	\$1 00	\$7 50	
Potted, 3 to 4 ft.....	75	6 00	
Potted, 2 to 3 ft.....	50	4 00	



Diervilla—Weigela. A Hardy Chinese Shrub Blooming After Lilacs.

TAMARIX (*Tamarisk*). Elegant, fine-flowering and handsome foliage shrub; thrives in all soils. One of the best for subduing shifting sands.

	EACH	10	100
8 to 10 ft.....	\$1 00	\$9 00	
6 to 8 ft.....	90	7 50	
4 to 6 ft.....	75	6 00	

French (*T. gallica*), 15 feet. Foliage exceedingly fine and feathery; flowers pink, small, very numerous.

Hispida (*T. kashgarica*), Japan, 15 feet. New. Very vigorous, upright grower; leaves bluish green; flowers bright carmine-red. Blooms twice a year.

WEIGELA (*Diervilla*). Hardy, ornamental shrubs, from China; bloom after lilacs.

	EACH	10	100
3 to 4 ft.....	\$0 75	\$6 00	
2 to 3 ft.....	60	5 00	
1 to 1½ ft.....	50	4 00	

Rose Flowered (*D. floridus rosea*), 6 feet. Flowers large and showy. Free-flowering. A splendid shrub, of compact growth.

Variegated Dwarf (*D. kosteriana nana variegata*). Leaves beautifully variegated silvery white; flowers nearly white.

Baileyana. 30 feet. A fine specimen or avenue tree; blooms earliest of all; lemon-yellow flowers. One of the hardiest.

	EACH	10	100
Potted.....6 to 8 ft.	\$1 50	\$12 50	
Potted.....5 to 6 ft.	1 25	10 00	
Potted.....4 to 5 ft.	1 00	7 50	
Potted.....3 to 4 ft.	75	6 00	

Baileyana, Green. 30 feet. Similar to the above except foliage is green. Said to be more floriferous.

	EACH	10	100
Potted.....4 to 5 ft.	\$1 00	\$7 50	
Potted.....3 to 4 ft.	75	6 00	

ACACIA—Continued Page 65.

ACACIA—Continued

Cultriformis (Knife-leaved). 8 feet. A small tree; leaves triangular shaped; blooms profusely; flowers deep yellow. Hardy.

	EACH	10
Potted.....6 to 8 ft.	\$1 00	\$7 50
Potted.....4 to 6 ft.	75	6 00
Potted.....3 to 4 ft.	50	4 00

Dealbata (Silver Wattle). 60 feet. A rapid-growing tree; feathery foliage; golden yellow flowers in February. Very hardy.

	EACH	10
Potted.....4 to 6 ft.	\$0 75	\$6 00
Potted.....3 to 4 ft.	60	5 00
Potted.....2 to 3 ft.	50	4 00

Decurrens (Green Wattle). 75 feet. One of the best for parks or avenues; leaves feathery, dark green; flowers whitish yellow, appearing in May; upright habit; hardy.

	EACH	10
Potted.....4 to 5 ft.	\$0 75	\$6 00
Potted.....2 to 3 ft.	50	4 00

Floribunda (A. nerifolia). 30 feet. A beautiful street tree, of pendulous habit; long, narrow leaves and bright yellow flowers. Fine for grouping.

	EACH	10
6-inch box.....5 to 6 ft.	\$0 75	\$6 00
Potted.....5 to 6 ft.	60	5 00
Potted.....4 to 5 ft.	50	4 00
Potted.....3 to 4 ft.	40	3 00

Latifolia. 20 feet. Of a spreading habit; valuable for grouping; long, glossy green leaves; flowers golden yellow.

	EACH	10
8-inch box.....6 to 8 ft.	\$1 00	\$7 50
Potted.....5 to 6 ft.	60	5 00
Potted.....4 to 5 ft.	50	4 00
Potted.....3 to 4 ft.	40	3 00

Melanoxylon (Black Acacia). 75 feet. A strong grower; one of the best for parks and street planting

	EACH	10	100
8-inch box.....7 to 8 ft.	\$1 00	\$7 50	\$60 00
6-inch box.....6 to 7 ft.	75	6 00	50 00
Potted.....5 to 6 ft.	60	5 00	35 00
Potted.....4 to 5 ft.	50	4 00	30 00

Mollissima (Black Wattle). 50 feet. One of the finest, foliage feathery, dark green; flowers yellow, appearing in early spring.

	EACH	10
Potted.....5 to 6 ft.	\$0 75	\$6 00
Potted.....4 to 5 ft.	60	5 00
Potted.....3 to 4 ft.	50	4 00

Podaliraeolia. 20 feet. Very rare and one of the most beautiful of the family. The blade-like leaves and the branches are of a bluish, silvery green. The flowers are borne in long racemes and are rich golden yellow. Very hardy and worthy of extensive culture.

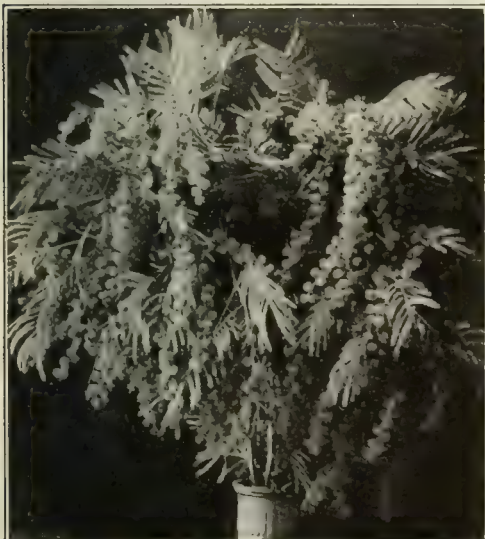
	EACH	10
Potted.....3 to 4 ft.	\$1 25	\$10 00
Potted.....2 to 3 ft.	1 00	7 50

Pycnantha (Golden Wattle). 30 feet. Rapid growth, leaves long and narrow, flowers fragrant, brilliant yellow, in pendulous clusters.

	EACH	10
Potted.....3 to 4 ft.	\$0 60	\$5 00
Potted.....2 to 3 ft.	50	4 00

ARAUCARIA BIDWILLI (Bunya Bunya Tree). Australia. 150 feet. A magnificent tree; branches in regular whorls, closely set with spiny, deep green leaves; handsome for lawn, and by far the finest and most attractive of all evergreen trees. Does well in the interior valleys.

	EACH	10
14-inch box.....7 to 8 ft.	\$10 00	
14-inch box.....6 to 7 ft.	7 00	
12-inch box.....5 to 6 ft.	6 00	
12-inch box.....3 to 4 ft.	4 00	
8-inch box.....2 to 3 ft.	2 50	\$20 00
6-inch box.....1 to 1½ ft.	1 50	12 50



Acacia mollissima—Yellow Flowering Beautiful Evergreen Tree.

Excelsa (Norfolk Island Pine). West of Australia. 200 feet. One of the handsomest. Pyramidal in form and very symmetrical; very desirable for interior decoration. Adapted to outdoor culture only in the coast counties.

	EACH	10
Cement pots.....6 to 8 ft.	\$8 00	
6-inch box.....1½ to 2 ft.	2 00	
Potted.....3 to 4 ft.	3 00	
Potted.....2 to 3 ft.	2 50	

Excelsa glauca. 200 feet. Similar to the preceding, but the foliage has a bluish cast.

	EACH	10
6-inch box.....1½ to 2 ft.	\$2 50	

Excelsa robusta compacta. 200 feet. Differs from *Excelsa* in its more robust and compact growth. Color rich, deep green.

	EACH	10
Potted.....1½ to 2 ft.	\$3 00	
Potted.....1 to 1½ ft.	2 50	

Imbricata (Monkey Puzzle). Chile. 100 feet. A fine tree of regular pyramidal form; leaves bright green, broad, thick, pointed and overlapping each other. Will grow in the great interior valleys, but must be protected for a few years

	EACH	10
14-inch box.....3 to 4 ft.	\$5 00	
8-inch box.....1 to 1½ ft.	1 50	\$12 50
Balled.....2 to 3 ft.	2 50	
Balled.....1½ to 2 ft.	2 00	15 00
Balled.....1 to 1½ ft.	1 50	12 50

ARBORVITAE (Thuja). The *Thuyas* are all of regular, symmetrical habit. They are roundish, pyramidal, and are well suited for massing or borders, also for hedges and wind-breaks.

	EACH	10
Boxed.....6 to 8 ft.	\$6 00	
Boxed.....5 to 6 ft.	5 00	
Boxed.....4 to 5 ft.	4 00	
Balled.....4 to 5 ft.	3 00	\$25 00
Balled.....3 to 4 ft.	2 50	20 00
Balled.....2 to 3 ft.	1 75	15 00
Potted.....1½ to 2 ft.	1 00	7 50

Special prices on application on specimen boxed plants, larger than listed above.

American (T. occidentalis). 60 feet. A native species known as the White Cedar. Foliage bright green, yellow-green beneath; brown and bronze in winter.

Ellwangeriana (Tom Thumb Arborvitae). 10 feet. A dwarf, compact-growing variety.

Ever Golden (T. orientalis semperaurescens). 10 feet. Of compact growth; golden tinted the year round. One of the best.

Gigantea (T. plicata). Pacific Coast. 200 feet. Branches spreading, regularly and closely set; foliage bright green, dark green beneath. The bark is brownish red and very attractive.

Globosa (T. viridis occidentalis). 10 feet. Very dwarf and compact. Rounded, ball-like form. Desirable for specimens and formal planting.

Golden (T. orientalis aurea). 15 feet. Elegant variety, regular habit; foliage beautifully tinged with gold in the spring.

Rosedale. 6 feet. Dwarf, very compact, foliage delicate and glaucous. Best suited for formal planting and cemeteries.

Weeping (T. filiformis pendula). 20 feet. Weeping variety, with pendulous, thread-like branches; foliage light yellowish green.

BEEFWOOD (Casuarina). Native of Australia, with extremely hard wood equaling in this respect the walnut and hickory. Its redness has given it the popular name of Beefwood. The branches are long and slender, and weeping with jointed needle-like leaves. They are odd but beautiful ornamental trees, growing well even in alkali soils. Of very rapid growth. Stand pruning well and as formal street trees and for hedges we recommend them highly.

	EACH	10
8-inch box.....6 to 7 ft.	\$1 25	
Potted.....6 to 7 ft.	1 00	\$8 00
Potted.....5 to 6 ft.	90	7 50
Potted.....3 to 4 ft.	60	5 00
Potted.....2 to 3 ft.	50	4 00

Equisetifolia (She Oak). 100 feet. Of very rapid growth, with drooping branches and dark green, needle-like leaves.

Stricta (C. quadrivalvis). 30 feet. Is of more erect habit than the preceding, but does not grow so tall.

BRACHYCHITON ACERIFOLIA (Flame Tree). Australia. 60 feet. Of pyramidal habit, with large, light green, deeply lobed, maple-like leaves. This is a very popular and desirable tree for street and lawn planting. Not very hardy.

	EACH	10
Balled.....4 to 6 ft.	\$3 00	\$25 00
Balled.....3 to 4 ft.	2 50	20 00
Balled.....2 to 3 ft.	2 00	15 00
Potted.....3 to 4 ft.	2 00	15 00
Potted.....2 to 3 ft.	1 50	12 50

Diversifolia (Victorian Bottle Tree). Australia. 40 feet. A magnificent avenue tree with graceful, tapering trunk. Foliage bright, glossy green, deeply lobed; shape changes throughout the season.

	EACH	10
Bare Roots.....6 to 8 ft.	\$2 50	\$20 00
Bare Roots.....5 to 6 ft.	2 00	15 00
6-inch box.....6 to 8 ft.	2 00	15 00
6-inch box.....5 to 6 ft.	1 50	12 50

CALIFORNIA BIG TREE (*Sequoia gigantea*). California. 350 feet. A magnificent park, avenue or specimen tree, of pyramidal form; lower branches sweeping the ground. Foliage bluish green, completely covering the branches. This is the famous "Big Tree of California". Reaches a diameter of 30 feet.

	EACH	10
Boxed.....3 to 4 ft.	\$4 00	
Balled.....4 to 6 ft.	5 00	
Balled.....3 to 4 ft.	3 50	\$30 00
Balled.....2 to 3 ft.	3 00	25 00

Weeping (*Sequoia Gigantea Pendula*). A unique form of Big Tree but limbs drooping down close to the trunk. A rare and beautiful tree.

	EACH
Boxed.....2 to 3 ft.	\$3 00
Boxed.....3 to 4 ft.	3 50

CALIFORNIA REDWOOD (*Sequoia sempervirens*). California. 300 feet. A valuable ornamental tree of rapid growth and of a tapering pyramidal habit. Leaves dark green with two pale bands beneath. The seed-cones, measuring 1 inch or less in length, are borne on long, drooping stems. Timber world famous. Diameter 15 feet.

	EACH	10
Boxed.....8 to 10 ft.	\$8 00	
Balled.....4 to 6 ft.	3 00	\$25 00
Balled.....3 to 4 ft.	2 00	15 00
Potted.....2 to 3 ft.	1 25	10 00
Potted.....1½ to 2 ft.	1 00	7 50

CALIFORNIA LAUREL OR BAY TREE (*Umbellularia californica*). California. 80 feet. A very rapid growing tree with glossy lanceolate oblong leaves. Along the coast near water courses it grows to perfection and makes a strikingly handsome tree. The foliage emits an agreeable perfume when bruised. Thrives equally as well in the interior but does not grow so tall.

	EACH	10
Balled.....3 to 4 ft.	\$2 00	
Balled.....2 to 3 ft.	1 50	\$12 50
Balled.....1½ to 2 ft.	1 25	10 00
Potted.....1 to 1½ ft.	75	6 00

CALLITRIS AUSTRALIS. Australia. 50 feet. Resembles our native Red Cedar. Conical in form and very dense habit. Desirable as a specimen tree.

	EACH
Potted, 1½ to 2 ft.	\$1 50
Potted, 1 to 1½ ft.	1 25

CAMPHOR TREE (*Camphora officinalis*). China and Japan. 40 feet. A most symmetrical ornamental tree, thriving in poor soil; foliage bright green. Well adapted for lawn, street and avenue planting.

	EACH	10	100
Potted.....6 to 7 ft.	\$1 25	\$10 00	\$90 00
Potted.....5 to 6 ft.	1 00	9 00	70 00
Potted.....4 to 5 ft.	90	7 00	50 00
Potted.....3 to 4 ft.	70	5 00	40 00
Potted.....2 to 3 ft.	50	4 00	30 00

CEDAR (*Cedrus*). Of majestic habit; valuable for planting grounds or avenues, where shade is not an object. Will succeed all over California, and in warmer valleys when once established is of very rapid growth.

	EACH	10
Tubs and boxes.....10 to 12 ft.	\$10 00	\$90 00
Tubs and boxes.....8 to 10 ft.	8 00	70 00
Tubs and boxes.....6 to 8 ft.	7 00	60 00
Tubs and boxes.....5 to 6 ft.	6 00	50 00
Balled.....5 to 6 ft.	4 00	30 00
Balled.....4 to 5 ft.	3 00	25 00
Balled.....3 to 4 ft.	2 50	20 00
Balled.....2 to 3 ft.	1 75	15 00

Note prices on rare varieties.

Atlantica (*Mt. Atlas Cedar*). Africa. 120 feet. A handsome pyramidal tree; silvery green foliage; branches have an upright tendency.

Cedar of Lebanon (*C. libani*). Asia Minor. 100 feet. Its biblical associations surround this tree with a sacred interest, which naturally appeals to our imaginations and this, combined with its adaptability to almost any soil, its vigorous, sturdy growth and dark green and lustrous foliage, should cause it to be widely planted.

Deodara (*Himalayan, or Indian Cedar*). 120 feet. Exceedingly handsome; drooping branches and silvery green foliage; very popular. The most rapid-growing of all cedars.

RARE VARIETIES OF CEDAR

Atlantica glauca (*Mt. Atlas Silver Cedar*). 100 feet. Similar to Atlantica, irregular straggling when young, later becoming symmetrical. A striking and most beautiful tree.

Atlantica pyramidalis. 120 feet. Shrub or tree of pyramidal habit, with ascending branches.

Deodara verticillata glauca (*Blue Cedar*). 75 feet. Very picturesque; branches rather irregular and clothed with silvery blue foliage; very distinct.

Deodara viridis (*Green Cedar*). 75 feet. Of graceful habit; foliage rich, lustrous green.

	EACH	10
Boxed.....8 to 10 ft.	\$12 50	
Balled.....6 to 8 ft.	7 50	
Balled.....5 to 6 ft.	6 00	\$50 00
Balled.....4 to 5 ft.	5 00	40 00
Balled.....3 to 4 ft.	4 00	30 00
Balled.....2 to 3 ft.	2 50	20 00

Deodara aurea (*Golden Variegated*). 75 feet. Of striking habit; foliage tipped golden.

	EACH
Balled, 3 to 4 ft.	\$4 00

Deodara robusta. 100 feet. A type of the Deodara with much longer leaves, very rigid.

	EACH
Balled, 3 to 4 ft.	\$3 00

CEPHALOTAXUS FORTUNEI (*Cluster-Flowered Yew*). Japan. 50 feet. Graceful tree with Yew-like foliage; plum-like fruit in clusters. Branches long, slender and pendulous.

Drupacea. 10 feet. A low bush with stiff, spreading branches.

	EACH	10
Boxed.....6 to 8 ft.	\$6 00	
6-inch box.....3 to 4 ft.	3 00	
6-inch box.....2 to 3 ft.	1 50	\$12 50
Balled.....2 to 3 ft.	2 00	15 00
Balled.....1½ to 2 ft.	1 50	12 50



An Avenue of *Cedrus deodara*—Silver Green Foliage, Evergreen

CRYPTOMERIA JAPONICA (Japan Cedar). Japan, 125 feet. Large, elongated, pyramidal tree, with straight, slender, tapering trunk; fern-like, upward spreading branches. The leading timber tree in Japan. EACH 10

6-inch box.....1½ to 2 ft. \$1 00 \$7 50
Japonica elegans (Elegant Japanese Cedar). 20 feet. Low, dense tree, with horizontal and pendulous branchlets; leaves soft; bronzy crimson in fall and winter. EACH 10
 Boxed.....6 to 8 ft. \$8 00
 6-inch box.....3 to 4 ft. \$2 50
 Balled.....5 to 6 ft. 6 50

CYPRESS (*Cupressus*). This numerous family of trees, with aromatic foliage, seem to adapt themselves to California conditions. Some varieties, like the *C. macrocarpa* (Monterey Cypress), stand pruning well and is very largely used for hedges. They grow very well in the interior valleys. Their native habitat seems to be confined to California and the Gulf States. They are not particular in regard to soil and situation, but prefer deep, sandy loams.

We have the *Arizona*, *Lusitanica* and *Macrocarpa* in pyramid trimmed trees established in containers which are highly suited for formal planting and porch decorations.

		EACH	10
Tubs and boxes.....	6 to 7 ft.	\$4 00	
Tubs and boxes.....	5 to 6 ft.	3 00	
Balled.....	6 to 8 ft.	3 00	\$25 00
Balled.....	5 to 6 ft.	2 00	15 00
Balled.....	4 to 5 ft.	1 50	12 50
Balled.....	3 to 4 ft.	1 25	10 00
Potted.....	3 to 4 ft.	90	8 00
Potted.....	2 to 3 ft.	75	6 00

Macrocarpa (Monterey Cypress), transplanted in flats, 10 to 12 in., \$2 50 per 100; \$20 00 per 1000.

Arizona (*Arizona Cypress*). 40 feet. Rare, slender, pyramidal; foliage pale, glaucous green, brown in winter.

Funebris (*Funeral Cypress*). China. 30 feet. A noble tree, with wide, drooping branches.

Goveniana (*Goven's Cypress*). California. 50 feet. Of erect growth, forming a handsome crown.

Italian Cypress. (*Sempervirens fastigiata*) Europe and Asia. 75 feet. Tall, tapering; branches erect, growing parallel with trunk; branches frond-like; leaves smooth, deep green.

Fine type specimen trees, all sizes to 20 ft. Prices on application.

Knightiana. Mexico. 70 feet. Rapid grower; foliage glaucous green.

Lambertiana lutea. Spreading branches, foliage yellow.

Lusitanica. Asia. 50 feet. Of spreading habit, with pendulous branchlets; leaves glaucous.

Macrocarpa guadalupensis (*Blue Cypress*). Guadalupe Islands. 50 feet. Branches spreading; foliage silvery blue; fine for grouping.

Macrocarpa (*Monterey*). 70 feet. One of California's famous trees; foliage grayish green; desirable for hedges.

CYPRESS (*Chamaecyparis*). Flat Branched Cypress.

		EACH	10
Tubs and boxes.....	4 to 6 ft.	\$3 50	
Balled.....	3 to 4 ft.	2 00	\$15 00
Balled.....	2 to 3 ft.	1 50	12 50
6-inch box.....	2 to 3 ft.	1 50	
6-inch box.....	1½ to 2 ft.	1 25	

Lawsoniana (*Lawson Cypress*), *Port Orford Cedar*. California and Oregon. 200 feet. Graceful and conspicuous; branches horizontal, slightly pendulous; foliage dark green. Fine for grouping or single specimen. For timber it is said to be more durable than Coast Redwood.



Ilex—Golden Variegated Holly. Desirable for Beautiful Leaves and Red Berries. See Page 68.

Lawsoniana coerulesa glauca. 30 feet. A Lawson type with foliage of immensely glaucous tint.

Lawsoniana compacta. 20 feet. Tree of compact, pyramidal habit.

Lawsoniana erecta viridis (*Erect Green Lawson Cypress*). 60 feet. Upright, dense columnar habit; bright green foliage.

Lawsoniana pendula. 40 feet. Tree with spreading pendulous branches.

Lawsoniana Triumph De Boskoop. 30 feet. A superb variety of recent introduction. Foliage bluish green. Finest coloring of the Lawson types.

Lawsoniana Youngii. 30 feet. One of the new varieties introduced from France. Erect grower, foliage glaucous green. Fine for specimen planting.

EUCALYPTUS (*The Gum Tree*). The tree is a native of Australia and serves a variety of purposes—for example, it is often planted in damp, swamp places, where it acts as a sort of drain, absorbing excess moisture and frequently improving an otherwise malarial locality. The ornamental value of the *Eucalyptus* is considerable; its merits should not be overlooked.

All varieties planted in flats contain about 100 plants to the flat. As it is necessary to cut the flat in case a smaller quantity is ordered, part flats will be charged at 1½ cents per tree higher than the hundred rate.

		EACH	10	100
6-inch box.....	6 to 8 ft.	\$0 75	\$6 00	\$50 00
Potted.....	6 to 8 ft.	60	5 00	40 00
Potted.....	5 to 6 ft.	50	4 00	35 00
Potted.....	4 to 5 ft.	40	3 50	30 00
Potted.....	3 to 4 ft.	35	3 00	25 00

Transplanted in flats, 10 to 12 inches, \$1.75 per 100; \$16.00 per 1000.

Note Prices on Rare Varieties also Ficifolia.

Corynocalyx. 120 feet. Beautiful, upright grower; distinct, bright, shiny, leaves; timber very durable. Not desirable in frosty locations. A graceful avenue tree.

Crebra (*Narrow Leaved Iron Bark*). 150 feet. Extremely hardy; stands great extremes of heat. Wood hard, elastic; very heavy. For poles, masts and piles one of the best.

Globulus (*Blue Gum*). 200 feet. Broad, bluish leaves when young. More extensively planted than any other variety; wood when polished resembles hickory. Valuable for wagon work, bridges, tool-handles, and as firewood.

Polyanthemos (*Red Box*). 100 feet. A fine avenue tree; leaves round, silvery; a late bloomer, withstands both drought and cold.

Robusta (*Swamp Mahogany*). 50 feet. Well adapted to low ground; foliage deep, glossy green; immense clusters of white flowers in fall and winter; desirable for bee-keepers. Rather dwarfish habit.

Rostrata (*Red Gum*). 200 feet. Outgrows any other variety in the interior valleys. Wood takes a handsome finish and is desirable for interiors. Called "Red Mahogany." Valuable for ties, fence posts, etc.

Rudis (*Desert Gum*). 100 feet. An excellent avenue tree, of very rapid growth, and withstands both heat and cold. Wood hard and close-grained.

Tereticornis (*Forest Gray Gum*). 150 feet. Fully as rapid a grower as the *Rostrata*; timber somewhat more durable.

Viminalis (*Manna Gum*). 300 feet. Very hardy; of rapid growth; fine avenue tree, with its long, graceful, festoon-like branches.

Rare Varieties of Eucalyptus

		EACH	10
6-inch box.....	6 to 8 ft.	\$1 00	\$7 50
Potted.....	6 to 8 ft.	75	6 00
Potted.....	5 to 6 ft.	60	5 00
Potted.....	4 to 5 ft.	50	4 00
Potted.....	3 to 4 ft.	40	3 00

Except Ficifolia.

Bosistoiana (*Bairdsdale Gray Box*). Australia. 100 feet. Grows to medium height but of large dimensions. Suitable for coast region. Wood used for wharves, jetties and bridges.

Cajaputea (*Odorata*). Australia. 150 feet. Similar to *Melliodora* except that it has a more erect habit.

Callophylla. Australia. 25 feet. A moderate sized tree and in appearance differs from most all other *Eucalypts*. Bark rough and brown; leaves dark green, glossy above and feather veined; flowers unusually large, cream colored borne in large clusters. Seed cones are often used for pipe bowls. Suitable for warm coast regions.

Citriodora (*Lemon Scented Gum*). Queensland. 150 feet. A rapid grower, foliage lemon scented; hence its name. Flowers creamy white. Tree sensitive to low temperatures. Wood strong and durable.

Hemiphloia (*Common Box*). Australia. 80 feet. A strikingly handsome variety, leaves glaucous green when young changing to deep green on both sides. Thrives well on the coast and in the interior valleys.

EUCALYPTUS—Continued Page 68

EUCALYPTUS—Continued

Leucoxydon (Victorian Ironbark, South Australian Blue Gum). 100 feet. Similar in growth and foliage to the Leucoxydon Rosea except that the flowers are white.

Leucoxydon rosea (South Australian Blue Gum). 75 feet. A rapid growing tree which adapts itself to a variety of locations. Thrives well on the coast and the interior. Foliage bluish cast; flowers are pink to scarlet. It's a strong rival to the Ficulfolia on account of its hardiness. Fine for specimen or avenue planting.

Melliodora (Yellow Box, Honey Scented). Australia. 250 feet. Strong grower; dark green foliage; flowers white with pronounced honey scented fragrance. A fine bee tree. Suitable for coast regions.

Sideroxydon (Red Iron Bark). Australia. 80 feet. Leaves vary from light to deep bluish green; flowers creamy white to pink and red. Wood is hard and durable.

Ficulfolia (Crimson Flowering). 30 feet. A unique type; dwarfish habit, large, dark green leaves and great clusters of brilliant scarlet flowers. Seed-cones so large they are often used for pipe bowls. Tender.

	EACH	10
Potted.....4 to 5 ft.	\$1 50	
Potted.....3 to 4 ft.	1 25	
Potted.....2 to 3 ft.	1 00	

FIRS (Abies). This group of remarkable evergreens vary in color from glaucous blue to dark green. Natural pyramid form valuable for single specimens or grouping. Distinguished from Spruce by their erect cones and needle-shaped leaves scattered all around the shoots.

Firma (Japanese Fir), Japan. 100 feet. Stately tree of rapid growth. Branches stout and flexible.

Nordmanniana (Nordmann's Silver Fir). Caucasus Europe. 150 feet. Very symmetrical; foliage massive, dark green, glossy above, slightly glaucous below. Does well in the interior valleys.

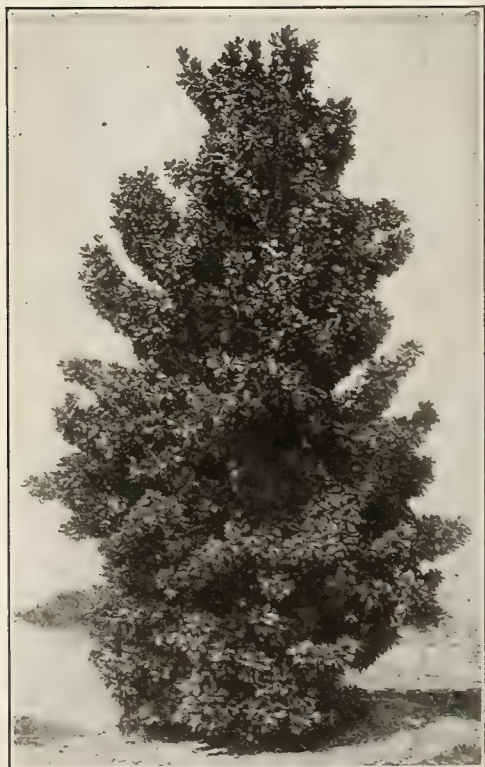
Pectinata (European Fir). Southern Europe, 150 feet. A noble tree; spreading branches; broad, silvery foliage.

Pinsapo (Spanish Silver Fir). India, 60 feet. Very regular and symmetrical in habit; leaves bright green above, silvery beneath; adapted to warm climates.

	EACH	10
Boxed.....4 to 5 ft.	\$6 00	
Boxed.....3 to 4 ft.	5 00	
Boxed.....2 to 3 ft.	3 00	
Boxed.....1½ to 2 ft.	1 75	
Potted.....2 to 3 ft.	2 00	

HOLLY, EUROPEAN (Ilex aquifolium). Europe and Asia. 40 feet. A small tree; shining, dark green, thorny leaves; bright red berries in winter.

	EACH	10
10-inch box.....2 to 3 ft.	\$3 00	\$25 00
10-inch box.....1½ to 2 ft.	2 50	20 00
Potted.....2 to 3 ft.	2 50	20 00
Potted.....1 to 1½ ft.	1 50	12 50



Magnolia grandiflora—Symmetrical Large Flowering, Leathery-leaved Trees.

JACARANDA MIMOSAEOFOLIA. Brazil. 50 feet. Symmetrical tree; fern-like leaves; flowers blue or violet, appearing in early summer. A favorite street tree in Southern California. Should not be planted in localities subject to severe frosts.

	EACH	10
6-inch box.....5 to 6 ft.	\$1 25	\$10 00

JUNIPER (Juniperus). These extremely hardy trees seem to be as much at home in the warm interior valleys as they are in the coast counties. They are very ornamental, mostly of pyramidal or columnar habit, and are very decorative either as single specimens on the lawn or if planted in groups. The low growing species are admirably adapted for covering rocky slopes or sandy banks. They are well adapted for hedges, for planting as shelter or windbreaks; also for seaside planting. The close-grained fragrant wood is much used for the interior finish of houses.

	EACH	10
Tubs and boxes.....6 to 8 ft.	\$5 00	
Balled.....5 to 6 ft.	3 00	
Balled.....4 to 5 ft.	2 50	
Balled.....3 to 4 ft.	2 00	\$15 00
Balled.....2 to 3 ft.	1 50	12 50
Potted.....1½ to 2 ft.	1 00	7 50

Note prices on Rare Varieties.

Bermudiana (Bermuda Juniper). Bermuda Islands. 40 feet. A very beautiful tree; foliage pale, bluish green.

Communis (Common). Eastern U. S. 40 feet. A tree with spreading branches, foliage grayish green, very dense; valuable as a ground cover.

Irish (J. communis hibernica). Eastern U. S. 25 feet. An erect, dense, conical tree.

Japan (J. japonica). Japan. 60 feet. Of pyramidal habit, with grayish green foliage.

Virginiana (Red Cedar). Eastern U. S. 100 feet. Usually pyramidal; foliage green or bronze-green.

RARE VARIETIES OF JUNIPER

Chinensis procumbens (Japanese Creeping Juniper). 4 feet. Valuable for rock work. A striking variety.

	EACH	10
6-inch box.....1½ to 2 ft.	\$2 00	
Balled.....2 to 3 ft.	2 50	

Japan Golden (J. japonica aurea). 20 feet. Spreading habit; foliage beautiful golden.

	EACH	10
10-inch box, 1½ to 2 ft.....	\$2 00	

Savin (J. sabina). South Europe. 8 feet. Low shrub; trailing branches; foliage dense, dark green.

Savin, Variegated (J. sabina variegata). South Europe. 8 feet. Low trailing shrubs, small branchlets variegated with creamy white.

	EACH	10
Boxed.....3 to 4 ft.	\$5 00	
Balled.....2 to 3 ft.	2 50	

LIBOCEDRUS. A valuable park and lawn tree, of pyramidal form; foliage bright green.

	EACH	10
Boxed.....6 to 8 ft.	\$7 00	
Balled.....5 to 6 ft.	4 00	\$30 00
Balled.....4 to 5 ft.	3 00	25 00
Balled.....3 to 4 ft.	2 50	20 00

Chilensis (Chilean Cedar). 60 feet. Silvery foliage; broad, drooping branches, ascending towards the summit, and quite erect at top.

Chilensis viridis (Green Chilean Cedar). 50 feet. Of same general type, but light green foliage. A magnificent evergreen.

Incense Cedar (L. decurrens). 100 feet. A very ornamental, distinct, erect, compact, growing tree, with a stout trunk; branches a bright, rich, glossy green, glaucous underneath; a native of the mountain regions of California and Oregon. Does exceedingly well on the coast and in the interior.

LYON'S SHRUB (Lyonothamnus floribundus asplenifolius). 40 feet. A native tree with handsome lustrous fern-like foliage. Large clusters of white flowers. One of the finest of the natives.

	EACH	10
Potted, 2 to 3 ft.....	\$1 25	

MADRONA (Arbutus menziesi). California. 75 feet. The well-known native tree growing so abundantly in Coast Range; very rare in cultivation due to the difficulty of growing it; foliage thick; leathery, bright green, like the Magnolia; bark smooth, brownish red; flowers white, fragrant, succeeded by red berries.

	EACH	10
Potted, 4 to 6 ft.....	\$3 00	\$25 00
Potted, 3 to 4 ft.....	2 00	15 00



Picea—pungens glauca kosteriana—Colorado Blue Spruce. Leaves Beautiful, Silvery Hue. A Striking Spruce. See Page 70.

MAGNOLIA. One of the grandest of broad-leaved evergreens; flowers fragrant, 10 to 12 inches across. Blooms abundantly in May and June, succeeded by cone-like fruits, bearing seeds of deep coral-red in October. Adapts itself to a wide range of locations.

Compressa. Leaves persisting. Flowers small white 1 inch across. EACH 10
Potted, 1½ to 2 ft. \$1 50

Grandiflora (Bull Bay). Southern U. S. 50 feet. Foliage thick, brilliant green on the upper surface, and rusty underneath; flowers pure waxy white.

		EACH	10
Boxed.....	8 to 10 ft.	\$8 00	
Boxed.....	6 to 8 ft.	6 00	
Boxed.....	4 to 6 ft.	3 50	
Balled.....	6 to 8 ft.	4 00	\$30 00
Balled.....	5 to 6 ft.	3 00	25 00
Balled.....	4 to 5 ft.	2 50	20 00
Balled.....	3 to 4 ft.	1 75	15 00
6-inch box.....	1½ to 2 ft.	1 25	10 00

Grandiflora exoniensis (Exmouth Magnolia). 20 feet. Hardest of Magnolias; begins blooming young; flowers large, pure white, double.

		EACH	10
8-inch box, 3 to 4 ft.....		\$2 75	
8-inch box, 1½ to 2 ft.....		1 50	

Grandiflora gallisoniensis (Gallison Magnolia). 60 feet. A hardy variety, leaves with upper surface glossy green, under surface russet brown.

		EACH	10
Balled, 3 to 4 ft.....		\$2 50	
Balled, 2 to 3 ft.....		2 00	

OAK (Quercus). The evergreen oaks are among our most picturesque trees. The *Q. agrifolia* with its bright, dark green foliage relieves the bareness of the hills during the summer months; in addition to this on the deep rich valley lands it makes a fine low-spreading tree, always effective. In late years more attention has been given to the oak for avenue and park planting. We can recommend the tree highly for both purposes.

		EACH	10
Boxed.....	6 to 8 ft.	\$3 00	\$25 00
Boxed.....	4 to 5 ft.	2 00	15 00
6-inch box.....	3 to 4 ft.	1 50	12 50
Potted.....	2 to 3 ft.	1 00	7 50

Except *Chrysolepis*, *Densiflora* and *Holly-leaved*.

California Live Oak (*Q. agrifolia*). 50 feet. The well-known majestic evergreen, growing abundantly along the shores of San Francisco Bay and the interior valleys, adding great beauty to our lowland scenery.

Chrysolepis (Maul Oak). California. 75 feet. Wide spreading head with pendulous branches. Leaves yellowish green above, glaucous beneath. One of the striking varieties of the California Live Oak.

		EACH	10
Potted, 1½ to 2 ft.....		\$0 75	

Densiflora (Tan Bark Oak). Pacific Coast. 50 feet. Spreading branches forming a dense, broad, round head, leaves green above, rusty beneath. One of the most beautiful oaks of the Pacific Coast.

		EACH	10
Potted, 8 to 12 in.....		\$0 50	

Holly or Holm Oak. (*Q. ilex*). 60 feet. A variety of the European Evergreen Oak, of medium size and very upright growth. A beautiful tree for grouping. Planted along the Riviera in So. France for tall formal hedges. Excellent for this purpose.

		EACH	10
Potted, 4 to 5 ft.....		\$1 50	

Suber (Cork Oak). S. Europe. N. Africa. 50 feet. A very ornamental and upright growing variety of evergreen oak; thrives well here; the outer bark furnishes the cork of commerce. A magnificent tree for avenues, parks or street planting.

PARKINSONIA ACULEATA (Jerusalem Thorn). 30 feet. A rare and beautiful thorny tree, with needle-like leaves; feathery, drooping branches and yellowish flowers.

		EACH	10
Potted.....	4 to 5 ft.	\$1 50	\$12 50
Potted.....	3 to 4 ft.	1 25	10 00
Potted.....	2 to 3 ft.	1 00	7 50

PEPPER TREE (*Schinus molle*). Peru. 40 feet. A most picturesque park, avenue or shade tree. Feathery foliage, yellowish white blossoms followed by rose-colored or deep red berries.

		EACH	10	100
Potted.....	6 to 8 ft.	\$1 00	\$7 50	\$60 00
Potted.....	4 to 5 ft.	60	5 00	40 00
Potted.....	3 to 4 ft.	50	4 00	35 00

PINE (Pinus). The family of pines is probably one of the most important of timber trees. The trees are usually tall with spreading branches forming a pyramidal or rounded-top and becoming very picturesque in old age. They are much used for subduing shifting sands and for seaside planting. They are all valuable for the decoration of parks, gardens, and for grouping among other trees. Should be planted extensively for windbreaks. Can also be used to splendid advantage for planting large estates and natural parks in the foothills.

We have grown a large stock anticipating this need, and have made special low prices on sorts suitable for this purpose balled and established in carload lots.

		EACH	10
Balled.....	8 to 10 ft.	\$3 00	\$25 00
Balled.....	6 to 8 ft.	2 00	15 00
Balled.....	5 to 6 ft.	1 50	12 50
Balled.....	4 to 5 ft.	1 25	10 00
Balled.....	3 to 4 ft.	1 00	7 50
Balled.....	2 to 3 ft.	80	6 00
6-inch box.....	4 to 6 ft.	1 00	7 50
6-inch box.....	3 to 4 ft.	75	6 00

Note Rare Varieties.

Austriaca (Austrian Pine). So. Europe. 100 feet. Robust, hardy, spreading; leaves rigid, dark green; thrives in exposed situations.

Canariensis (Canary Island Pine). 80 feet. A rapid-growing, handsome pine. Leaves slender, spreading and pendulous, dark green.

Coulteri (Bull Pine). California. 80 feet. Stout branches, drooping below and ascending above, form a loose, pyramidal head.

Excelsa. India. 80 feet. Handsome tree with drooping, silvery foliage. Hardy.

Halepensis (Aleppo Pine). Western Asia. 60 feet. A fine variety, with dense, bluish foliage.

Laricina (Corsican Pine). So. Europe. 100 feet. Erect; branches tend to curve round the tree; leaves long, dark green.

Maritima (P. pineaster) (Cluster Pine). Southern Europe. 60 feet. A beautiful tree; leaves stiff, twisted, bright, glossy green. Of variable habit. Valuable for the seaside. Does well in the interior.

Ponderosa (Western Yellow Pine). California and Oregon. 200 feet. Tall growing pine with short, spreading, often pendulous branches, the uppermost ascending, forming an open pyramidal head, leaves long, sharp; light bluish green. Distinctly ornamental with symmetrical habit.

Radiata (Monterey Pine) (P. insignis). California. 100 feet. Leaves slender and dark green. Well adapted to coast regions.

Strobus (White Pine). Newfoundland. 120 feet. Very tall trees; branches horizontal, in regular whorls; leaves soft, bluish green.

Sylvestris (Scotch Pine). Europe and Asia. 70 feet. Of robust growth, with pendulous branches; leaves bluish green.

Torreyana (Soledad Pine). (Torrey Pine). California. 50 feet. Branches spreading or ascending; leaves rigid, dark green.

PINE—Continued Page 70

PINE—Continued

RARE VARIETIES OF PINE.

Montana (Swiss Mountain Pine). Mountains of Middle Europe. 40 feet. Handsome, spreading, low-growing; bright green leaves.

	EACH	10
Balled.....2 to 3 ft.	\$1 50	\$12 50
Balled.....1½ to 2 ft.	1 25	10 00
Balled.....1 to 1½ ft.	1 00	7 50

Pinea (Parasol Pine) (Italian Stone Pine). Southern Europe. 50 feet. This most beautiful tree is one of the features of the landscape in Southern Europe. Does remarkably well in California and is worthy of wide dissemination. Branches spreading, usually clustered at top of tree.

	EACH	10
Balled.....4 to 6 ft.	\$1 50	\$12 50
Balled.....3 to 4 ft.	1 25	10 00

RUBBER TREE (Ficus elastica). Asia. 100 feet. Popular for indoor decoration; leaves large, dark, glossy green above, yellow beneath. Has a habit of staying bright and attractive even when neglected; is hardly practicable outdoors except in our southern coast counties.

	EACH	10
Potted, 3 to 4 ft.	\$1 75	
Potted, 2 to 3 ft.	1 50	
Potted, 1½ to 2 ft.	1 25	

Macrophylla (Moreton Bay Fig). Australia. 100 feet. Hardier than the above, with somewhat smaller leaves; valuable for indoor and outdoor planting.

	EACH	10
8-inch box, 4 to 6 ft.	\$2 50	
8-inch box, 3 to 4 ft.	2 00	

SEQUOIA GIGANTEA. See California Big Tree.

SEQUOIA SEMPERVIRENS. See California Redwood.

SILK OAK (Grevillea robusta), Australia, 100 feet. Very graceful, fern-like leaves; of rapid growth; covered with bronze-yellow flowers in early summer. Resists drought; stately for avenue and lawn.

	EACH	10	100
6-inch box, 6 to 7 ft	\$1 00	\$7 50	\$60 00
Potted, 5 to 6 ft	75	6 00	50 00
Potted, 4 to 5 ft	60	5 00	40 00
Potted, 3 to 4 ft	50	4 00	30 00

SPRUCES (Picea). In habit of growth the Spruces are very similar to the Firs, but the branches stand out from the main stem more horizontally, and not so closely together. Distinguished from the Firs mainly by their drooping cones and linear, flat leaves on the upper side of the branches; the Firs have their needles short and scattered all around the branches.

	EACH	10	100
Boxed, 4 to 5 ft.	\$6 00		
Boxed, 3 to 4 ft.	5 00		
Boxed, 2 to 3 ft.	3 00		
Boxed, 1½ to 2 ft.	1 75		

(Specimen plants up to 15 feet—prices on application)

Note Rare Varieties

Alba (White Spruce), N. America, 70 feet. Foliage silvery gray; strong aromatic odor when bruised.

Douglasi (Douglas Spruce), Oregon, 120 feet. A rapid-growing native tree of symmetrical habit.

Excelsa (Norway Spruce), Europe, 150 feet. A lofty, rapid grower; branches of graceful, drooping habit; very hardy.

Menziessii (Sitka Spruce), Alaska to California, 100 feet. Similar to White Spruce; foliage rich blue or sage color.

RARE VARIETIES OF SPRUCES.

Pungens glauca (Colorado Spruce), Rocky Mountains, 80 feet. Branches in regular whorls, gradually receding toward top, and forming a conical outline. Leaves vary from green to silvery white. Thrives in dry climates.

Pungens glauca kosteriana (Colorado or Koster's Blue Spruce), 40 feet. A form of preceding. The most beautiful for garden or lawn; foliage silvery blue.

	EACH	10
6 in. box, 2 to 3 ft.	\$3 00	

STERCULIA. See Brachychiton.

THUYOPSIS (The Japanese Thuyas). Beautiful conifers, thriving best in moist, cool climates; stand extreme cold.

Borealis (Cupressus nootkatensis) (Nootka Sound Cypress, Yellow Cedar), Sitka to Oregon, 120 feet. Very desirable; pyramidal habit, with light, glossy green foliage.

	EACH	10
Cement pots, 3 to 4 ft	\$3 50	
10-inch box, 3 to 4 ft	2 50	
10-inch box, 2 to 3 ft	2 00	
Balled, 5 to 6 ft.	3 50	
Balled, 4 to 5 ft.	3 00	
Balled, 3 to 4 ft.	2 50	

TORREYA (Nutmeg). These beautiful Yew like trees are well adapted to California conditions. Their foliage effects are fully equal to the Firs and they have the advantage of not being affected by the extremes of heat in the summer months.

Californica (Tumion californicum, California Nutmeg), 40 feet. A handsome, yew-like tree, forming a compact head and producing a nut very much resembling the nutmeg of commerce. The leaves are dark green and lustrous 1 to 3 inches long. An interesting tree adapting itself to a wide range of locations.

	EACH	10
Potted, 1 to 1½ ft.	\$1 50	

Nucifera (Japanese Nutmeg Cedar). Tree varies from 30 to 80 feet high; branches in regular whorls with yew-like aspect; leaves leathery, about an inch long, dark green, paler beneath; nuts oval about an inch long. The bark is bright red, contrasting strongly with the foliage.

	EACH	10
Boxed, 3 to 4 ft.	\$2 50	
Boxed, 1½ to 2 ft.	1 50	

YEW (Taxus). Very desirable for park planting; densely clothed with dark green. Wood heavy, hard, close-grained, strong, elastic, reddish. Thrive best in a moderately moist sandy loam. In warm dry climates they must be shaded the first year.

	EACH	10
Tubs and boxes, 4 to 5 ft	\$3 50	
Tubs and boxes, 3 to 4 ft	2 50	
10-inch box, 3 to 4 ft.	2 00	
8-inch box, 2 to 3 ft.	1 75	
6-inch box, 1½ to 2 ft.	1 50	

Dwarf Golden (T. baccata elegantissima), 20 feet. One of the most valuable dwarf, golden-leaved evergreen Yew; new leaves bright straw color.

English (T. baccata), Europe, 40 feet. Slow growth; densely branched, spreading head; dark green leaves.

Irish (T. baccata fastigiata) 40 feet. An upright-growing variety; deep, dark green foliage. One of the most desirable evergreens of columnar habit for formal gardens.

Variegated Irish Yew (T. baccata fastigiata variegata), 20 feet. Same habit as above, but with part of the foliage striped and margined with silvery white or pale straw-colored blotches.

Write for Prices on Specimen Sizes Evergreen Trees and Shrubs.



Sequoia gigantea—California Big Tree.
See Page 66.

EVERGREEN SHRUBS

Nowhere in the United States or perhaps in all the world is it possible to use the large assortment of beautiful flowering evergreen shrubs, many of which bear colored berries in the winter season, as in California. These hundreds of different varieties of green, golden and silver variegated foliaged plants are used for every purpose to make the gardens and landscape views attractive every day of the year.

ABELIA GRANDIFLORA (*A. rupestris*), 6 feet. A garden hybrid. A pretty shrub of straggling growth, bearing small, fragrant, tube-like flowers during the entire summer, color light rose on the outside and white on the inside.

	EACH	10
Balled, 4 to 5 ft.	\$2 50	\$20 00
Balled, 3 to 4 ft.	2 00	15 00
Balled, 2 to 3 ft.	1 50	12 50
Potted, 1 to 1½ ft.	75	6 00

ARALIA (*Fatsia*). The Aralias, with the exception of *A. papyrifera*, are only adapted for house or conservatory culture. They are very pretty decorative plants and do remarkably well indoors. They grow in open ground in Southern California.

Papyrifera (*F. papyrifera*), Rice Paper Plant, China, 20 feet. A very tropical looking small tree or shrub with very large, deeply lobed leaves light green above and downy beneath. It is of very easy culture and is so effective within a short time that it deserves to be generally planted.

	EACH
Boxed, 3 to 4 ft.	\$1 50
Potted, 2 to 3 ft.	1 00

Sieboldii (*F. japonica*), Japanese Aralia, Japan, 8 feet. A beautiful plant, with large, glossy palmate leaves.

Sieboldii variegata (Japanese Variegated Aralia). Similar to preceding; leaves broadly marked with creamy white.

	EACH
Boxed, 2 to 3 ft.	\$1 75
Boxed, 1½ to 2 ft.	1 50
Potted, 2 to 3 ft.	1 50
Potted, 1½ to 2 ft.	1 00

ANGEL'S TRUMPET (*Datura arborea*), S. America, 10 feet. Large shrub or tree; leaves 6 to 12 inches long, covered with fine "powder." Flowers creamy white, trumpet-shaped, 7 to 8 inches long, with a musk-like odor. Blooms all summer.

	EACH
Potted, 1 to 1½ ft.	\$0 75
Potted, 8 to 12 in.	60

AUCUBA JAPONICA (Japanese Laurel), 4 feet. S. Asia to Japan. A very handsome shrub, and one of the best of the colored-leaved foliage plants; leaves large, distinctly speckled with golden-yellow; should be grown in partial shade.

	EACH
10-inch box, 1 to 1½ ft.	\$0 60
Potted, 2 to 3 ft.	75
Potted, 1 to 1½ ft.	50

Japonica aureo maculata, 6 feet. A form of the above, with yellow spotted leaves.

	EACH
Tubs, 2 to 3 ft.	\$1 50
Potted, 2 to 3 ft.	1 00
Potted, 1½ to 2 ft.	75
Potted, 1 to 1½ ft.	60

AZARA MICROPHYLLA, Chile, 15 feet. A graceful shrub with dark shining green leaves; flowers greenish yellow succeeded by orange colored berries. Very desirable as a single plant or for grouping. Does remarkably well in the interior.

	EACH	10
Balled, 1 to 1½ ft.	\$0 60	
Potted, 8 to 12 in.	40	\$3 00

BERBERIS DARWINI (Darwin's Barberry), Chile, 4 feet. A spreading shrub, with thick, leathery foliage; flowers orange-yellow, very fragrant, followed by dark purple fruit.

	EACH	10
Potted, 1 to 1½ ft.	\$0 75	\$6 00

Ilicifolia (Holly leaved Barberry). So. America, 5 feet, of low dense growth; brilliant red fruits, scarlet in fall.

	EACH	10
Potted, 1 to 1½ ft.	\$0 60	\$5 00
Potted, 8 to 12 in.	50	4 00

See Mahonia for description Berberis Californica.

BUXUS (The Boxwoods). These very ornamental shrubs of dense but rather slow growth, with shining foliage are invaluable for grouping, lawn decoration and for hedge purposes. For tub culture and for formal decorative work they are more extensively grown than any other class of plants. They thrive in a warm dry climate fully as well as on the coast. The very hard and close grained wood is in demand for engraving and finer turnery work.

	EACH	10
Tubs and boxes, 3 to 4 ft.	\$3 00	
Tubs and boxes, 2 to 3 ft.	2 50	
10-inch box, 2 to 3 ft.	1 50	
10-inch box 1½ to 2 ft.	1 25	
6-inch box, 1 ft.	75	
Cement pots, 3 to 4 ft.	3 50	
Cement pots, 2 to 3 ft.	3 00	
Cement pots, 1½ to 2 ft.	2 50	
Cement pots, 1 to 1½ ft.	2 00	
Balled, 3 to 4 ft.	2 50	\$20 00
Balled, 2 to 3 ft.	2 00	15 00
Balled, 1½ to 2 ft.	1 50	12 50
Balled, 1 to 1½ ft.	1 25	10 00

Except Suffruticosa.

Japonica angustifolia (Narrow-leaved Japanese Box).: feet. Light green, long narrow leaves. A very compact slow grower. Excellent for low hedge.

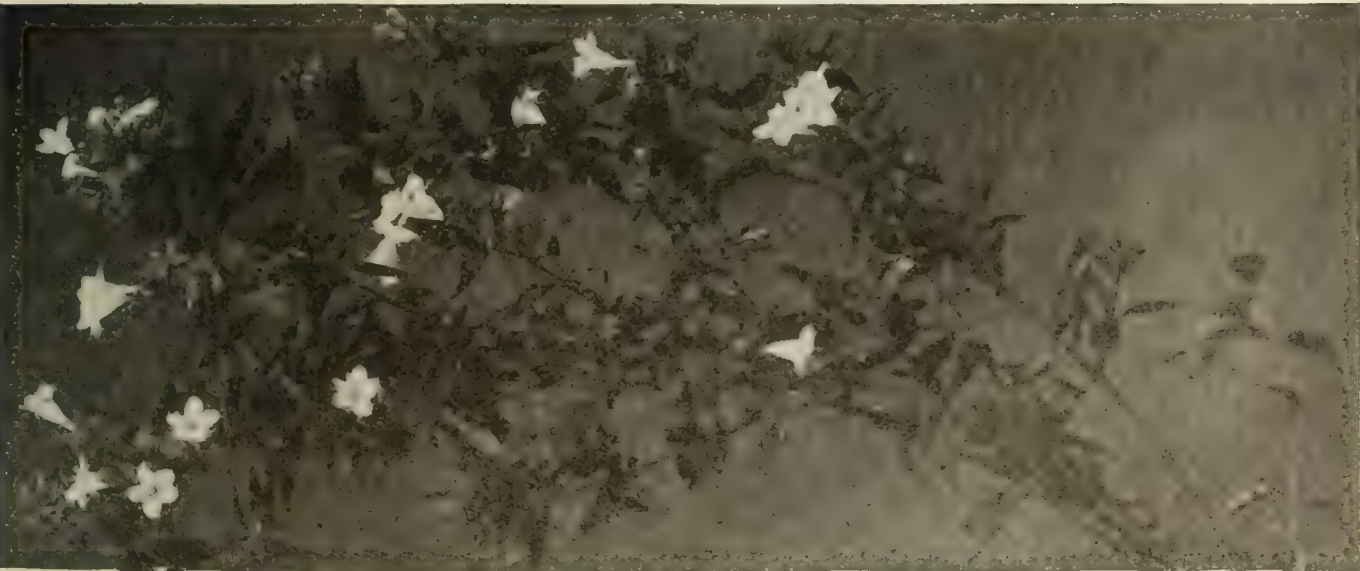
Japonica Rotundifolia, Handsome light green glossy foliage. Rapid grower; excellent for hedges.

Sempervirens (Tree Box), Europe, 10 feet. Large shrubs of dense habit; small foliage.

Sempervirens arborescens, 25 feet. Tall shrub or small tree. Suitable for tall hedge.

Sempervirens argentea-marginata (Silver Striped-Leaved Box Tree), 6 feet. Of the same habit as the above, but with silvery-striped leaves.

Sempervirens aurea (Golden-Leaved Box Tree), 6 feet. Leaves striped and variegated with golden.



Abelia grandiflora—Bears Tube-like Flowers Through Entire Summer.



Pyracantha—Burning Bush, Bears White Flowers Followed by Masses of Crimson Berries.

Handsworthii, 6 feet. Erect grower, noted for the size and symmetry of foliage.

Sempervirens rotundifolia, 6 feet. Foliage large, golden. Fine for single specimens.

SPECIAL VARIETIES OF BUXUS

Sempervirens suffruticosa (Dwarf Box), 3 feet. Small bush, with glossy, roundish leaves; extensively used for edging.

	EACH	10	100
Cement pots, 1 to 1½ ft.....	\$2 50		
6-inch box, 8 to 12 in.....	75	\$ 6 00	\$50 00
Balled, 1 to 1½ ft.....	1 25	10 00	
Balled, 8 to 12 in.....	75	6 00	50 00

BREATH OF HEAVEN (Diosma ericoides), Africa, 4 feet. Foliage heath-like; agreeably fragrant; flowers white, small, star-shaped; used in floral work. Plant hardy; very easily grown.

	EACH	10	100
Potted, 1½ to 2 ft.....	\$0 75	\$6 00	
Potted, 1 to 1½ ft.....	60	5 00	
Balled, 1 to 1½ ft.....	1 00	7 50	

BROOM (Cytisus). Will succeed in almost any soil or situation. The large, pea-shaped flowers appear in the spring, followed by small pods; leaves rounded elongation of the stem.

Alba, Europe, 6 feet. With slender, erect, grooved branches, and white flowers.

	EACH	10	100
Potted, 2 to 3 ft.....	\$0 75	\$6 00	

Andreana (C. scoparius andreaus), Europe, 10 feet. New. A beautiful variety. Flowers golden yellow, rich, velvety purple and crimson wings.

	EACH	10	100
Potted, 1 to 1½ ft.....	\$0 50	\$4 00	

Canariensis (Canary Islands), 8 feet. Makes a dense growth. Branches very downy. Flowers borne dense racemes, bright yellow and fragrant.

	EACH	10	100
Potted, 2 to 3 ft.....	\$0 75	\$6 00	

Scotch (C. scoparius), Europe, 8 ft. Drooping branches; covered in spring with bright yellow, pea-shaped flowers.

	EACH	10	100
Potted, 8 to 12 in.....	\$0 40	\$3 00	

Spanish (C. hispanica), Europe, 8 feet. An upright-growing shrub; flowers yellow, on long, drooping, leafless branches.

	EACH	10	100
Potted, 3 to 4 ft.....	\$0 75	\$6 00	
Potted, 2 to 3 ft.....	0 60	5 00	

BUDDLEIA JAPONICA, Japan, 5 feet. A handsome ornamental shrub, spreading habit; flowers lilac color and borne in pendulous racemes.

	EACH	10	100
Potted, 1½ to 2 ft.....	\$0 60	\$5 00	

BURNING BUSH (Pyracantha), Europe, 10 feet. A thick, thorny shrub, foliage small, rich, bronzy, glossy green color; white flowers, followed by masses of crimson berries, persisting all winter. All of this family is very hardy and withstands the coldest weather.

	EACH	10	100
6-inch boxes 2 to 3 ft.....	\$1 00	\$7 50	
6-inch boxes 1½ to 2 ft.....	75	6 00	
Potted, 1 to 1½ ft.....	60	5 00	
Balled, 3 to 4 ft.....	1 50	12 50	
Balled, 2 to 3 ft.....	1 25	10 00	

Crenulata (Chinese Evergreen Hawthorn), Himalayas, 10 feet. A beautiful shrub in spring; brilliant in winter, with masses of scarlet berries.

	EACH	10	100
Potted, 2 to 3 ft.....	\$1 00	\$7 50	
Potted, 1 to 1½ ft.....	60	5 00	

Lalandii (P. coccinea), Asia, 12 feet. Similar to the preceding but of more vigorous growth; berries orange yellow.

	EACH	10	100
6-inch box, 1½ to 2 ft.....	\$0 75		
Potted, 1 to 1½ ft.....	60		

Yunnanensis.—A vigorous growing variety of recent introduction. Bright glossy green foliage and beautiful display of bright coral red berries.

	EACH	10	100
6-inch box, 1½ to 2 ft.....	\$0 75		
Potted, 1 to 1½ ft.....	60		

CAMELLIA JAPONICA, Japan, 6 to 12 feet. Very beautiful winter flowering evergreens; their handsome, shining, dark green foliage and magnificent, wax-like flowers of various colors which appear in great profusion all winter render them indispensable for the conservatory, and well adapted for parlor or window culture; perfectly hardy in this climate, in the open ground, but should be planted in a shady place and protected the first year.

	EACH	10	100
Well branched plants varying from 1 to 4 ft.	\$1 25 to \$3 00		

Double Pink. Blooms early; one of the best.

Double Red. Flowers very double; largest size; beautiful red.

Double Red and White. Flowers double red, striped white; free-flowering.

Double White. Produces abundance of large, pure white, double flowers.

CARPENTERIA CALIFORNICA (Wild Anemone), 6 feet. An ornamental, tall growing shrub; a native of the Sierra Nevada mountains; flowers pure white with yellow stamens like a greatly enlarged Mock Orange, from three to four inches across, and very fragrant. Adapted to the driest locations. A grand native shrub.

	EACH	10	100
Potted, 1½ to 2 ft.....	\$1 00		
Potted, 1 to 1½ ft.....	75		

CASSIA ARTEMISOIDES, Australia, 6 feet. A very strong growing shrub with narrow, linear leaves; flowers deep yellow; withstands drought.

Corymbosa, Argentina, 6 feet. Small shrub of graceful appearance with slender branches and fine foliage. Bloom very freely all summer.

	EACH	10	100
Balled, 4 to 6 ft.....	\$2 00	\$15 00	
Balled, 3 to 4 ft.....	1 50	12 50	
6-inch box, 4 to 6 ft.....	1 50	12 50	

CEANOTHUS. Free flowering shrubs especially valuable for their late flowering habit. Grow in almost any soil, preferring a sunny position.

	EACH	10	100
Potted, 2 to 3 ft.....	\$2 00		
Potted, 1 to 1½ ft.....	\$0 75		

Arboreus (Tree Myrtle), California, 10 feet. Small tree with whitish bark. Flowers pale blue to white borne in panicles.

Azureus (C. hybridus), 10 feet. Flowers pale blue, leaves bright green above, downy beneath.



Wild Anemone—*Carpenteria californica*. A Grand California Native Shrub. (See Page 72)

CEANOTHUS—Continued

Prostratus, California, 3 feet. A procumbent shrub. Leaves coarse and toothed. Bears blue flowers in clusters at end of short branches.

Thyrsoiflorus (California Lilac), 20 feet. A splendid variety, with fine, dark green foliage; flowers light blue.

CESTRUM AURANTIACUM, Guatemala, 4 feet. Free-flowering evergreen shrub; covered all summer with orange-colored flowers.

Potted, 1½ to 2 ft. \$0 60

Potted, 1 to 1½ ft. 50

Elegans (Coral Plant), 4 feet. Strong-growing shrub. Purplish red, trumpet-shaped flowers.

Fasciculatum, Mexico, 4 feet. Flowers of a deeper purplish red than the preceding.

Potted, 8 to 12 inches. \$0 40 \$3 00

CERRY (*Cerasus*). A bush or small tree sometimes making a height of 20 feet. Very ornamental with shining, dark glossy green holly-like foliage, and found growing in the lower foothills throughout California. Flowers are produced in racemes and are followed by large red or black purple cherries, the stone almost filling them. A superb shrub and worthy of extensive cultivation. Often used for hedges.

Potted, 3 to 4 ft. \$1 00

Potted, 2 to 3 ft. 90 \$7 50

Potted, 1½ to 2 ft. 75 6 00

Potted, 1 to 1½ ft. 60 5 00

Broad-Leaved (*C. integrifolia*), Catalina Islands, California, 15 feet. Similar to preceding; leaves larger, with few spines; flowers more numerous and fruit larger.

California Evergreen (*Cerasus ilicifolia*), 20 feet. With brilliant foliage, lighter than Holly. Found in the lower foothills of California.

Carolina Cherry (*C. carolina*), Mock Orange of the South, South U. S., 30 feet. A well known shrub or tree of the south. Desirable as a single specimen or for grouping. A most effective background. Flowers cream colored. A very handsome evergreen.

CHOISYA TERNATA (Mexican Orange), Mexico, 8 feet. Low-growing shrub; glossy, bright green, fragrant leaves and abundant, snowy, sweet-scented flowers during the entire season. Very desirable for hedges.

6-inch box, 1½ to 2 ft. \$1 00 \$7 50

Potted, 1 to 1½ ft. 60 5 00

Balled, 4 to 6 ft. 2 50 20 00

Balled, 3 to 4 ft. 2 00 15 00

Balled, 2 to 3 ft. 1 50 12 50

CHRISTMAS BERRY (*Heteromeles arbutifolia*), 10 feet. A native shrub of California, growing quite abundantly in the coast counties and thriving equally as well in the hot, dry climate of the interior. In bloom in the summer, in numerous white panicles. Valued highly not only as a striking decorative plant but also for the deep red berries which hang in immense clusters on the ends of the branches from November to February. These berries are extensively used during the holidays and are known as Christmas Berries, Holly Berries, etc.

Potted, 4 to 6 ft. \$2 00 \$15 00

Potted, 2 to 3 ft. 1 25 10 00

Potted, 1½ to 2 ft. 1 00 7 50

CISTUS LADANIFERUS (Spotted Rock Rose), Europe, 3 feet. Spreading shrub of prostrate growth. Flowers large, pure white with crimson spot at base of petals. Handsome and free flowering.

Crispus, 2 ft. A compact growing variety with large deep rose colored flowers.

Potted, 8 to 12 inch. \$0 60

COLLETIA CRUCIATA, S. America, 4 feet. Cur. leaves, with elliptic, flattened, prickly spiny leaves. Covered in spring with small white flowers. Fine single specimen plants

Potted, 4 to 6 ft. \$0 75 \$5 00

Potted, 3 to 4 ft. 50 4 00

Potted, 2 to 3 ft. 40 3 00

COPROSMA BAUERIANA PICTURATA, New Zealand, 6 feet. Dense-growing shrub with rounded, glossy green leaves. Fine decorative specimen plants; makes a fine, compact hedge.

Potted, 1½ to 2 ft. \$0 50 \$4 00

Potted, 1 to 1½ ft. 40 3 00

Balled, 2 to 3 ft. 1 00 9 00

CORONILLA GLAUCA, Europe, 4 feet. Pretty evergreen shrub, covered with yellow flowers in summer; fragrant in daytime, scentless at night; foliage glaucous green

Glauc variegata, Europe, 4 feet. Similar to the preceding, but leaves are mottled yellow.

Potted, 2 to 3 ft. \$0 60 \$5 00

Potted, 1½ to 2 ft. 50 4 00

COTONEASTER. Chiefly grown for their red fruits which are borne in great profusion, and remaining throughout the whole winter. Thrive in any good drained soil. Rapidly attaining great and deserved popularity.

6-inch box, 2 to 3 ft. \$1 00 \$7 50

6-inch box, 1½ to 2 ft. 75 6 00

6-inch box, 1 to 1½ ft. 60 5 00

Horizontalis, China, 2 feet. Branches stout, almost horizontal; large, rose-colored flowers; leaves small, turning bright red in fall.

Microphylla, Himalayas, 2 feet. Well adapted for rockeries on account of their low, almost horizontal growth. They will thrive in any ordinary garden soil. Flowers small, white, appearing in May and followed during the fall and winter months with bright red berries.

Pannosa, China, 10 feet. Shrub of upright growth, branches long and slender, leaves deep green above, silvery beneath. Flowers white followed by enormous quantities of red berries in the fall.

DAPHNE ODORA (White Flowering), Japan, 4 feet. Low-growing; dark, glossy foliage and very fragrant white flowers in winter.

Variegated (*D. odora variegata*), Japan, 4 feet. Similar to above; leaves variegated and flowers pink.

Potted, 1½ to 2 ft. \$1 75



Heteromeles arbutifolia—Christmas Berry. California Native Shrub. Berries Used for Christmas Decorations.

DAPHNIPHYLLUM MACROPODUM, Japan, 15 feet.
Effective shrub; large, broad, leathery leaves. EACH 10
Potted, 4 to 6 ft. \$0 75
Potted, 3 to 4 ft. 60
Potted, 2 to 3 ft. 50

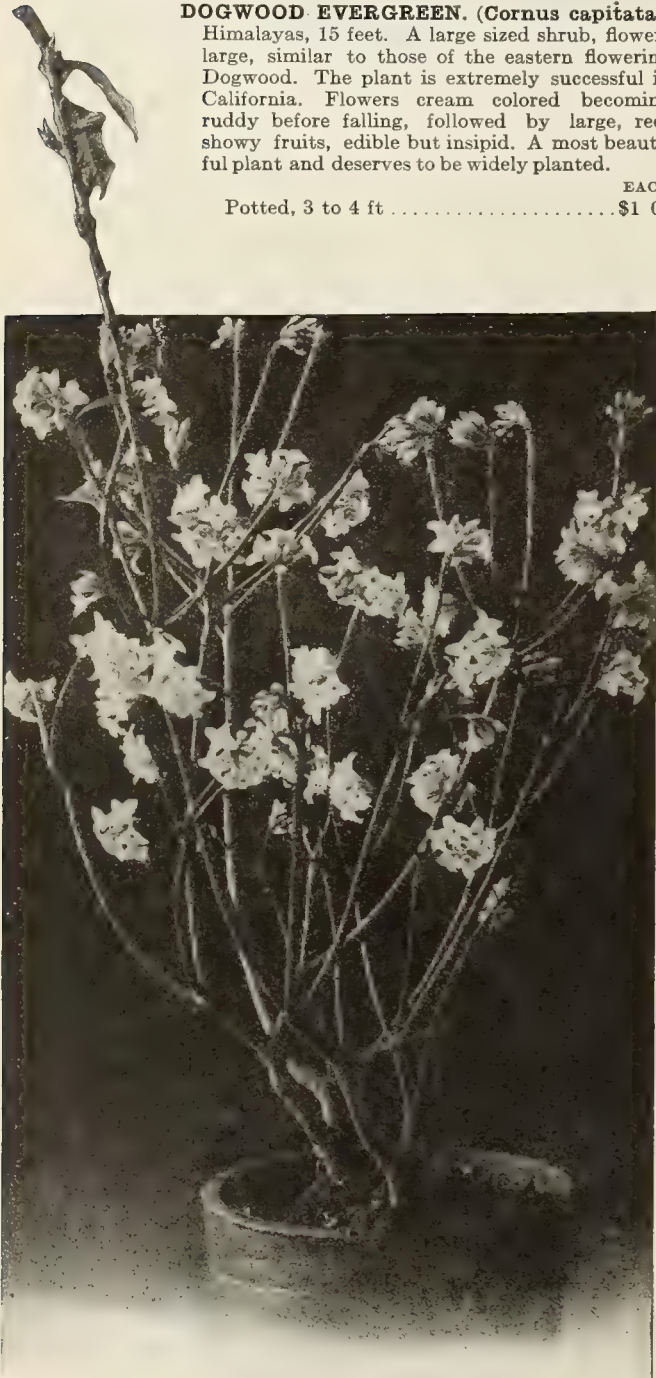
DEERINGIA CELESOIDES, Australia, 4 feet. Pretty, graceful shrub; light green foliage.

Celesoides variegata, Australia, 4 feet. Slender-growing shrub; white-margined leaves and long spikes of white flowers in summer. EACH 10
6-inch box, 1½ to 2 ft. \$0 50 \$4 00
Balled, 6 to 8 ft. 2 00
Balled, 4 to 5 ft. 1 25

DENDROPANAX JAPONICUS, Japan, 4 feet. Very unique and attractive; has maple-like leaves, white flowers and small, round berries. EACH
Potted, 3 to 4 ft. \$1 00
Potted, 2 to 3 ft. 75

DOGWOOD EVERGREEN. (*Cornus capitata*), Himalayas, 15 feet. A large sized shrub, flowers large, similar to those of the eastern flowering Dogwood. The plant is extremely successful in California. Flowers cream colored becoming ruddy before falling, followed by large, red, showy fruits, edible but insipid. A most beautiful plant and deserves to be widely planted.

EACH
Potted, 3 to 4 ft. \$1 00



Daphne odora—A Beautiful Japanese Shrub Bearing Fragrant White Flowers in Winter. See Page 73.

DURANTA PLUMIERI (Golden Dew Drop), America, 6 feet. Blue flowers, oddly striped in great profusion all summer, followed by yellow berries. EACH 10
Balled, 4 to 6 ft., Pyramids \$2 50 \$20 00
Balled, 3 to 4 ft. 1 00 7 50
Balled, 3 to 4 ft., Globes. 2 00 15 00
Potted, 1½ to 2 ft. 75

ELAEAGNUS (The Evergreen Oleaster). Highly ornamental shrubs with handsome foliage and for this reason very decorative either on a lawn or as single specimens. Will do well in any ordinary soil and thrive remarkably well in the interior valleys. Very attractive planted as a hedge, trimmed to a height of 5 feet. EACH 10
Balled, 3 to 4 ft. \$1 25 \$10 00
Balled, 2 to 3 ft. 1 00 8 00
Potted, 1½ to 2 ft. 90 7 50
6-inch box, 1 to 1½ ft. 75 6 00

Reflexa maculata (Golden Leaved Oleaster), Japan 6 feet. Foliage blotched golden yellow.

Reflexa pungens (Bronze Oleaster), Japan, 10 feet. Spreading shrub, bronzy brown branches; leaves glossy green above and silvery beneath.

Reflexa variegata (Variegated Oleaster), Japan 8 feet. Of same habit as two preceding, except leaves margined yellowish.

ESCALLONIA, South America. These fine plants grow freely in almost any ordinary soil; they are well adapted as shelter plants for hedges. As foliage plants alone they are exceedingly attractive but add to this their very free flowering habit and they present a combination of qualities making them invaluable as all around purpose plants.

Alba, 10 feet. Shrub of erect habit; foliage dark green, glossy; flowers loose in panicles, white. EACH 10
Balled, 3 to 4 ft. \$1 50 \$12 50
Balled, 2 to 3 ft. 1 25 10 00
Potted, 1½ to 2 ft. 75 6 00

Montevidensis, 10 feet. Erect bush, cylindrical branches; roundish, dark, glossy leaves; flowers white, all summer.

EACH
6 inch box, 2 to 3 ft. \$1 25

Rosea, 6 feet. In general, same as preceding; flowers light pink. EACH
Potted, 2 to 3 ft. \$1 00
Potted, 1½ to 2 ft. 75
Potted, 1 to 1½ ft. 60

Rubra, 4 feet. Branches erect, hairy; dwarf; shining green leaves, bright red flowers. EACH 10
6 inch box, 1½ to 2 ft. \$0 75 \$6 00

EUGENIA. Shrub or low growing tree, very closely related to the Myrtle. Grown chiefly for their ornamental foliage and berries. Desirable as specimen plants and for hedges.

EACH
6 inch box, 4 to 6 ft. \$2 00
Potted, 3 to 4 ft. 1 25
Potted, 2 to 3 ft. 1 00
Balled, 3 to 4 ft., Pyramids and Globes. 2 50

Apiculata (*E. myrtus luma*), Chile, 8 feet. Very attractive shrub, with small smooth rounded leaves, tipped with a small point. Flowers white, very free flowering. Contrast between foliage and flowers very marked. A fine specimen plant and makes a fine hedge plant.

Myrtifolia (*E. australis*) Brush Cherry, Australia, 15 feet. Handsome shrub of compact growth; leaves dark green, the new growth being a ruddy red. Blooms very profusely, followed with purple berries. Will not stand much cold.

EVONYMUS, Japan, 3 to 8 feet. Very desirable for hedges. Variegated varieties are very effective when planted alone or when established in containers for porch decorations. The shrubs are being very largely planted in all parts of the State. Stands severe pruning. EACH 10

Cement pots, 3 to 4 ft. \$3 00
Cement pots, 2 to 3 ft. 2 50
Cement pots, 1½ to 2 ft. 1 75
6-inch box, 1½ to 2 ft. 90 \$ 7 50
Balled, 3 to 4 ft. 1 75 15 00
Balled, 2 to 3 ft. 1 50 12 50
Balled, 1½ to 2 ft. 1 00 7 50
Potted, 1 to 1½ ft. 60 5 00

Except rare varieties, see price.

Japonicus (Evergreen Evonymus). Dense, upright; leaves dark, lustrous green.

Japonicus albo marginatus (Silver-Margined Evonymus). Compact growth; leaves have narrow white margin.

Japonicus argenteo variegatus (Silver Variegated Evonymus). Upright; silvery variegated foliage.

Japonicus aureus (Golden Leaved Evonymus). Prized for its golden foliage.

Japonicus, duc d'anjou (Golden Blotched Evonymus). Foliage light green, outer edges variegated, golden yellow band.

EVONYMUS—Continued Page 75.

RECENTLY INTRODUCED VARIETIES OF
EVONYMUS

Japonicus microphyllus (E. pulchellus). Dwarf; small, deep green leaves. Very desirable for low hedges.

	EACH	10
Cement pots, 1½ to 2 ft	\$2 00	
Balled, 1½ to 2 ft	1 25	
6-inch box, 1 to 1½ ft	75	\$6 00

Japonicus medio pictus. Moderate grower; leaves with yellow blotch in middle.

Japonicus President Gouthier. A splendid variety with large leaves, beautifully variegated creamy white.

Japonicus compacta viridis. (New). A very compact, erect-growing variety, with bright green leaves.

	EACH	
Cement pots, 2 to 3 ft	\$3 00	
Boxed, 2 to 3 ft	2 00	
6-inch box, 1½ to 2 ft	1 00	
6-inch box, 1 to 1½ ft	75	



Hypericum moserianum—Gold Flower. A Pretty Flowering Shrub Desirable for Borders.

FABIANA IMBRICATA, S. America, 3 feet. A very erect-growing shrub with heath-like foliage and white, funnel-shaped flowers.

	EACH	10
Potted, 1½ to 2 ft	\$0 75	\$6 00
Potted, 1 to 1½ ft	60	5 00

FREMONTIA CALIFORNICA (False Slippery Elm), 6 feet. A native shrub which should be more extensively cultivated. Found in the Coast Range and the Sierra Nevada Mountains. Very attractive when covered with its golden yellow blooms in summer.

	EACH	
Potted, 10 to 12 inches	\$1 25	

GARRYA ELLIPTICA (Silk Tassel Bush), California to New Mexico, 8 feet. Leaves elliptical; dark green and shining above, hoary beneath; flowers orange-colored, arranged in elegant pendulous catkins from 6 to 9 inches long and proceeding from near the apex of the shoots, resembling silk tassels, followed by black berries; worthy of extensive cultivation.

	EACH	
Potted, 2 to 3 ft	\$1 25	

GREVILLEA THELEMANNIANA, 6 feet. Beautiful evergreen shrub, fine feathery foliage producing continuous display of brilliant scarlet flowers on ends of branches. Plant only in protected sections of California.

	EACH	10
Potted, 2 to 3 ft	\$1 25	\$10 00
Potted, 1½ to 2 ft	1 00	7 50

HAKEA. Australia. Quite largely used in landscape work in Southern California. Small and compact. Very resistant to drouth and should be planted in well drained soils. Hardy as far north as Sacramento.

Laurina (H. eucalyptoides) (Sea Urchin), 20 feet. The only variety with showy flowers. Used for ground covers and hedges. In Italy it is called "The glory of the gardens of the Riviera."

Suaevolens (H. pectinata), 10 feet. Highly suited for hedges. Can be planted in dry locations. Flowers white.

	EACH	
6-inch box, 4 to 6 ft	\$1 25	
Potted, 2 to 3 ft	60	
Potted, 1½ to 2 ft	50	

HEATH MEDITERRANEAN (ERICA), S. Europe, 2 feet. Dwarf shrub with numerous short branches, densely clothed with small needle-like leaves. Very showy plants and produce exquisite purplish pink flowers in early spring. This is the only variety that will do well in warm climates.

	EACH	10
Potted 2 to 3 ft	\$0 75	\$6 00
Potted, 1½ to 2 ft	60	5 00
Potted, 1 to 1½ ft	50	4 00

HYPERICUM HIRCINUM, S. Europe, 4 feet. Of bushy growth; more erect than the following

Moserianum (Gold Flower), France, 3 feet. Hardy; abundant single yellow flowers, 2 inches across; leaves dark green, ovate.

Patulum Henryii, 3 feet. This variety is hardier than Moserianum. Makes a vigorous growth. Suitable for low hedges.

	EACH	10
6-inch box, 2 to 3 ft	\$0 75	\$6 00
Balled, 1½ to 2 ft	50	7 50
Potted, 1½ to 2 ft	75	6 00
Potted, 1 to 1½ ft	60	5 00

LAGUNARIA PATERSONII, Norfolk Island, Australia, 20 feet. Tall, pyramidal; leaves whitish beneath. Flowers like Hibiscus; white to pink.

	EACH	10
Potted, 6 to 12 in	\$0 40	\$3 00

LAUREL (Laurus). There are few foliage plants superior to the Laurel for inside or out of door decoration or ornamental purposes. They can be used advantageously as single specimens, for grouping and for embellishing the lawn and are very effective wherever planted. Habitat S. Europe.

	EACH	10
Balled, 5 to 6 ft	\$3 00	\$25 00
Balled, 4 to 5 ft	2 50	20 00
Balled, 3 to 4 ft	2 00	15 00
Balled, 2 to 3 ft	1 50	12 50
Potted, 1½ to 2 ft	90	7 50

Except Sweet Bay.

English (L. cerasus), 15 feet. Broad, shining leaves; great clusters of creamy white flowers; purple berries.

Portugal (L. lusitanica), 4 feet. Dwarfish, with glossy dark leaves; flowers intensely fragrant at night.

Sweet Bay (L. nobilis), 60 feet. Upright; deep, dark green, fragrant leaves; covered in fall with shiny black berries. May be pruned or cropped into various shapes.

	EACH	10
Tubs and boxes, 4 to 6 ft	\$3 50	\$30 00
Balled, 3 to 4 ft	1 50	12 50
Potted 3 to 4 ft	75	6 00
Potted, 2 to 3 ft	60	5 00

LAURUSTINUS (Viburnum tinus), Mediterranean region, 8 to 12 feet. A well known and popular shrub planted widely in California as a specimen plant and very fine for hedges. Bears an abundance of white flowers in the winter. Very hardy.

	EACH	10
Cement pots, 2 to 3 ft	\$2 25	
Balled, 3 to 4 ft	1 25	\$10 00
Balled, 2 to 3 ft	1 00	7 50
6-inch-box, 1½ to 2 ft	75	6 00
6-inch box, 1 to 1½ ft	60	5 00

Except Variegated.

Grandiflorus (V. Tinus grandiflorum). Leaves and flowers much larger than preceding.

Rotundifolia (V. Tinus rotundifolium). Leaves rounded, glossy green; flower heads very large; never sun-scalds.

Variegated (V. Tinus variegatum). Leaves blotched silvery.

	EACH	
Balled, 2 to 3 ft	\$1 00	
Balled, 1½ to 2 ft	75	
Balled, 1 to 1½ ft	60	

LEPTOSPERMUM LAEVIGATUM, Australia, 20 feet. A tall gracefully arching shrub; foliage grayish green; flowers white in the greatest profusion. A fine shrub to secure rapid effects; not very particular as to location. Used very extensively in the pioneer work in Golden Gate Park. Does very well in the interior valleys.

	EACH	10
Potted, 3 to 4 ft	\$1 00	\$7 50
Potted, 2 to 3 ft	75	6 00

LONICERA NITIDA. (Upright Evergreen Honeysuckle) 6 ft. A very beautiful shrub of recent introduction. Its graceful stems with a wealth of tiny glossy green leaves, white flowers, followed with purple fruit make it very desirable.

	EACH	10
Potted, 1½ to 2 ft	\$1 00	\$7 50
Potted, 1 to 1½ ft	75	6 00

MAHONIA AQUIFOLIUM (Oregon Grape), Pacific Coast, 6 feet. Shining, purplish, prickly leaves; bright yellow flowers; berries blue-black. A native variety used for covert planting.

	EACH	
Balled, 3 to 4 ft	\$2 00	
Balled, 2 to 3 ft	1 50	
Balled, 1½ to 2 ft	1 25	

Japonica (Japanese Mahonia), 8 feet. Very distinct; leaves about a foot long; clusters of bright yellow flowers in long racemes; not suitable for hot climates.

	EACH	
Balled, 2 to 3 ft	\$2 00	
Balled, 1½ to 2 ft	1 50	
Balled, 1 to 1½ ft	1 00	

Pinnata (M. fascicularis), California, 5 feet. Very similar to the Oregon Grape in character but distinguished from that variety by its more prickly and very bright green leaves. New growth quite red. Flowers yellow, followed by dark blue berries in clusters. A grand shrub for grouping.

	EACH	
Potted, 1½ to 2 ft	\$1 50	

MAYTENUS BOARIA, Chile, 30 feet. A beautiful evergreen with pendulous branches and small, greenish flowers.

	EACH	10
Potted, 6 to 12 in.	\$0 40	\$3 00

MELALEUCA, Australia. These low-spreading shrubs are wonderfully well adapted to the interior valleys of California. Their free-flowering qualities, combined with their rapidity of growth, make them valuable acquisitions.

	EACH	10
Boxed, 3 to 4 ft.	\$1 25	\$10 00
Boxed, 2 to 3 ft.	1 00	7 50
6-inch box, 2 to 3 ft.	60	5 00
6-inch box, 1½ to 2 ft.	50	4 00
Potted, 1 to 1½ ft.	40	

Alba, 15 feet. Flowers white.

Armilaris, 15 feet. Flowers white.

Decussata, 15 feet. Smooth leaves; lilac-colored flowers in August.

Ericifolia, 8 feet. Flowers pale yellow; leaves feathery, spreading or recurved.

Hypericifolia, 8 feet. Of spreading habit; flowers red.

Leucadendron (Cajuput Tree), 20 feet. Flowers white, in pendulous spikes; leaves long, lanceolate. A fine and very desirable shrub.

Oppositifolia, 8 feet. Graceful foliage; scarlet flowers.

Wilsonii, 10 feet. Fine erect-growing shrub with medium-sized, lance-shaped leaves. Foliage soft and pleasing. New growths ruddy, making a beautiful contrast.

METROSIDEROS (Callistemon), Bottle Brush, Australia. Thrives perfectly in California. Is covered with rich crimson flowers in dense racemes from May to July. A very beautiful and attractive large shrub.

Robusta, 6 feet. An odd shrub, covered with rich, crimson flowers, in dense racemes, in July.

Semperflorens, 10 ft. Leaves thick, lanceolate, reddish when young; flowers in reddish spikes; rather loose. Rapid grower.

	EACH	10
Balled, 4 to 5 ft.	\$1 00	
Balled, 3 to 4 ft.	90	\$7 50
Balled, 2 to 3 ft.	75	6 00
6-inch box, 2 to 3 ft.	60	5 00
Potted, 1 to 1½ ft.	40	3 00



Mahonia aquifolium—Oregon Grape. Blue Berries with Dark Green Foliage Very Attractive. See Page 75.

MYOPORUM LAETUM, New Zealand, 20 feet. Quick growth; leaves large, glossy, oleander-like; small white flowers, pink berries. Grows well in nearly any soil.

	EACH	10
Potted, 2 to 3 ft.	\$0 75	\$6 00
Potted, 1½ to 2 ft.	60	5 00

MYRTLE (Myrtus), Europe. Classic shrub, with handsome, aromatic foliage, and fragrant white flowers, which appear all summer; effective for grouping. We can supply these plants trimmed up like Bay Trees with 2 to 3 foot stem and crowns well shaped and developed. These make fine specimens for formal planting and when planted in containers are very desirable for porch decorations.

Standard.

	EACH
Tubs and Cement pots, 18-in. stem, 15-in. head	\$3 50
Tubs and Cement pots, 12-in. stem, 12-in. head	3 00

Bush Form.

	EACH	10
Balled, 3 to 4 ft.	\$1 50	\$12 50
Balled, 2 to 3 ft.	1 25	10 00
Balled, 1½ to 2 ft.	1 00	7 50
Potted, 1 to 1½ ft.	60	5 00

Common (M. communis), 10 feet. Dwarf shrubs; lustrous green leaves. Does well in the interior valleys.

Microphylla (Small Leaved Myrtle), 6 feet. Small, dark green foliage, set closely along branches. Fine ornamental shrub.

Nana Variegated, 4 feet. A form of the Communis except the leaves are variegated, and bush of dwarfish habit.

NANDINA DOMESTICA (Japanese Nandina), 4 to 6 feet. A beautiful upright growing dwarfish shrub with a number of reed like stems about as thick as a finger and crowned with deep, glossy green leaves and with tall spikes of white flowers. The young growth is prettily tinged with red and in the winter assumes beautiful coppery tones. In the fall it is covered with masses of small red and white berries. This elegant, graceful plant does well on the coast and interior.

	EACH	10
Tubs, 2 to 3 ft.	\$2 50	
Cement pots, 2 to 3 ft.	3 00	
Balled, 3 to 4 ft.	2 00	\$15 00
Balled, 2 to 3 ft.	1 50	12 50
Potted, 1 to 1½ ft.	1 00	7 50

OLEANDER (Nerium), S. Asia, 15 feet. We are making a specialty of growing these beautiful plants, and have selected the following fine varieties as the best. Oleanders are particularly adapted to this climate and are deserving of more cultivation than has been given to them; their large deep green foliage, combined with their fragrant flowers of many hues, which appear all summer render them our most attractive and effective ornamental plants.

	EACH	10	100
Tubs and boxes, 4 to 5 ft.	\$2 50		
Tubs, 3 to 4 ft.	1 75		
10-in. box, 3 to 4 ft.	1 50		
8-in. box, 2 to 3 ft.	1 25		
Balled, 4 to 5 ft.	1 50	\$12 50	
Balled, 3 to 4 ft.	1 25	10 00	\$75 00
Balled, 2 to 3 ft.	1 00	7 50	60 00
Potted, 3 to 4 ft.	1 25	10 00	
Potted, 2 to 3 ft.	90	7 50	
Potted, 1 to 1½ ft.	50	4 00	

Album Maximum. A robust grower with good foliage; single white flowers.

Album plenum. The most perfect white variety; flowers very double in large trusses. Very free flowering.

Atropurpureum duplex. One of the best doubles; deep carmine, streaked white.

Laurifolium. Especially remarkable on account of its stiff, broad foliage like that of a laurel. Flowers rosy pink, streaked white. A thrifty grower.

Lillian Henderson. Double white; heliotrope-scented.

Madame Peyre. Double; ivory to straw color.

Mme. Planchon. Semi-double; rosy lilac.

Madam Sarah Bernhardt. Immense truss; single, delicate white, streaked pink.

Madoni grandiflorum. Creamy white, semi-double; fragrant; strong grower.

Mrs. F. Roeding. Originated by us; strong grower; very hardy; flowers double, finely fringed, color of La France rose.

Nankin. Single; salmon-yellow; of dwarfish habit; best yellow.

Nankin Variegated. Leaves beautifully variegated; flowers double, light pink.

Professor Durand. Very double; changing from creamy yellow to deep amber-yellow.

Purpureum. Single; deep carmine-crimson, shaded maroon.

Sister Agnes. Very large truss; single pearly white; very free-blooming.

Splendens giganteum. Double rose; very fragrant; largest of all Oleanders; blooms all summer.

OSMANTHUS FRAGRANS (Japan Fragrant Olive), 20 feet. Small tree; sweet; fragrant; both white and yellow flowered varieties. Blooms continuously during winter.

	EACH
Boxed, 3 to 4 ft.	\$1 50
Boxed, 2 to 3 ft.	1 25

PHOTINIA SERRULATA, China, 20 feet. A tall shrub with glossy green leaves from 5 to 7 inches long which assume the most beautiful tints during the winter months. Flowers are borne in broad panicles or heads and are followed in the fall by bright red berries. Perfectly hardy and highly ornamental.

	EACH	10	100
Boxed, 6 to 8 ft.	\$2 50		
Boxed, 4 to 6 ft.	2 00		
Bare roots, 6 to 8 ft.	2 00	\$15 00	
Bare roots, 4 to 6 ft.	1 50	12 50	

PITTOSPORUM. Very bright foliated plants either growing compact with spreading branches or with an erect upright habit. They are all very ornamental and their attractive colors combined with the fact that some of them are very free flowering, causes them to be in demand for grouping, hedges and for lawn ornamentation.

Crassifolium (Thick Leaved Pittosporum), New Zealand, 10 feet. Highly ornamental on account of pale, glaucous foliage; valuable for windbreaks.

Eugenioides, New Zealand, 20 feet. Upright grower; silvery, light green leaves; black stems; very fine for hedges.

	EACH	10
Boxed, 4 to 5 ft.	\$1 50	
6-inch box, 1½ to 2 ft.	50	\$4 00
Potted, 1 to 1½ ft.	40	3 00

Phylliraeoides, Australia, 30 feet. Slender, graceful habit like Weeping Willow; flowers yellow.

	EACH	10
6-inch box, 6 to 8 ft.	\$1 75	\$15 00
6-inch box, 3 to 4 ft.	1 50	12 50
6-inch box, 2 to 3 ft.	1 25	10 00
Potted, 5 to 6 ft.	1 50	

Rhombifolium (Queensland Pittosporum), 20 feet. An ornamental tree suited for avenue planting. Flowers white and fragrant followed by yellow berries persisting all winter.

	EACH	10
Potted, 8 to 12 inch.	\$0 50	\$4 00

Tenuifolium (P. nigricans), New Zealand, 40 feet. Similar in growth to Eugenioides except that leaves are smaller and darker green. Remarkable for its black flowers.

	EACH	10
Potted, 3 to 4 ft.	\$0 75	\$6 00
Potted, 2 to 3 ft.	60	5 00

Tobira (Japanese Pittosporum), 10 feet. Low-growing shrub, dark green leaves; fragrant flowers; pure white.

Tobira variegatum (Variegated Japanese Pittosporum), 4 feet. Same habit as the preceding; foliage margined white.

	EACH	10
Boxed, 1½ to 2 ft.	\$1 00	
Balled, 4 to 6 ft. Specimens.	7 00	
Balled, 3 to 4 ft.	2 00	\$15 00
Balled, 2 to 3 ft.	1 50	12 50
Balled, 1½ to 2 ft.	1 25	10 00
6-inch boxes, 1 to 1½ ft.	75	6 00

Undulatum (Wavy Leaved Pittosporum), Australia, 10 feet. Deep green, glossy leaves; flowers intensely fragrant at night.

	EACH	10
6-inch box, 2 to 3 ft.	\$0 90	\$7 50
6-inch box, 1½ to 2 ft.	75	6 00
6-inch box, 1 to 1½ ft.	60	5 00
Potted, 2 to 3 ft.	75	6 00

PLUM NATAL (Carrisa grandiflora), S. Africa, 20 feet. A striking flowering shrub. Flowers have a strong Jasmine odor, succeeded by scarlet edible fruits; foliage glossy green.

	EACH	10
Potted, 1½ to 2 ft.	\$0 75	\$6 00

POLYGALA DALMAISIANA, S. Africa, 4 feet. A very free blooming plant with rosy pea-shaped flowers completely enveloping it during the entire summer. The odd color and shape of the flowers and its free blooming make it very attractive. It will stand considerable frost.

	EACH	10
Potted, 8 to 12 in.	\$0 50	\$4 00

PRIVET EVERGREEN (Ligustrum). Ornamental shrubs or small trees, with shining green leaves and small, whitish flowers, followed by black, round berries. Fine for tall hedges.

	EACH	10
6-inch box, 2 to 3 ft.	\$1 00	
6-inch box, 1½ to 2 ft.	90	\$7 50
Balled, 3 to 4 ft.	1 25	10 00
Balled, 2 to 3 ft.	1 00	7 50
Balled, 1½ to 2 ft.	75	6 00
Potted, 1 to 1½ ft.	60	5 00

Areum variegatum (Golden Variegated), Japan, 15 feet. Similar to lucidum except that leaves are yellow.

Except Japonica and Lucidum Tricolor.

Coriaceum (Privet), Japan, 6 feet. Dwarf; dense; short, rigid branches; leaves dark green, shining above.

Nepalense, Himalaya, 10 feet. An exceedingly strong, upright grower; light green leaves. Well adapted for hedges.

Reevesi (Reeves' Privet). Small shrub, very small light green leaves; flowers white in sprays. Excellent for either hedge or specimen plant.

Robusta Variegata. Rapid growth; rich green leaves beautifully variegated with yellow.

Sinense (Chinese Privet) 10 feet. Slender, spreading leaves, shining dark above, light beneath; bluish black berries covered with bloom.

Japonicum (Japanese Privet), 15 feet. Glossy, dark, leathery leaves; white flowers in clusters; purplish berries.

	EACH	10
Naked roots, 3 to 4 ft.	\$0 60	\$5 00
Naked roots, 2 to 3 ft.	40	3 00
Potted, 2 to 3 ft.	50	4 00

RAPHIOLEPIS INDICA (Indian Hawthorn), India, 15 feet. Grows taller than Japonica. Willow-like foliage. Flowers pinkish white borne in loose panicles, and followed by dark blue berries which hang in clusters.

	EACH	10
6-inch box, 1 to 1½ ft.	\$0 75	
Potted, 8 to 12 in.	60	

Japonica ovata, Japan, 10 feet. Compact-growing shrub; dark green leaves; white flowers in summer, followed by black berries.

	EACH	10
6-inch box, 1 to 1½ ft.	\$0 75	\$6 00
6-inch box, 8 to 12 in.	60	5 00
Balled, 1½ to 2 ft.	1 25	10 00
Balled, 1 to 1½ ft.	1 00	7 50
Potted, 1 to 1½ ft.	60	5 00
Potted, 8 to 12 in.	50	4 00

RHAMNUS ALATERNUS, Europe, 20 feet. Very hardy shrub, with smooth, shining green leaves and short racemes of small, greenish flowers.

	EACH	10
Balled, 6 to 8 ft.	\$2 50	
Potted, 2 to 3 ft.	1 00	
Potted, 1 to 2 ft.	75	

Corymbosa (White Senna), Argentine, 6 feet. An elegant shrub with yellow flowers, blooming at intervals during the entire season.

	EACH	10
Potted, 1 to 1½ ft.	\$0 40	\$3 00

STRAWBERRY TREE (Arbutus unedo), Europe, 10 feet. Foliage dark green, peculiarly beautiful in the fall, when the tree is covered at once with blossoms and ripe fruit, which is edible; identical in appearance with strawberries.

	EACH	10
Potted, 3 to 4 ft.	\$1 50	
Potted, 2 to 3 ft.	1 25	
Potted, 1½ to 2 ft.	1 00	

TEUCRIUM, 8 feet. Hardy plants with aromatic foliage; suitable for garden or rock-work.

	EACH	10
Balled, 4 to 5 ft.	\$1 50	\$12 50
Balled, 3 to 4 ft.	1 25	10 00
Balled, 2 to 3 ft.	1 00	7 50
Potted, 2 to 3 ft.	75	6 00
Potted, 1 to 1½ ft.	60	5 00

Canadense. Eastern U. S. 8 feet. Useful for low grounds and moist borders, flowers purple to creamy.

Fruticans. S. Europe. 5 feet. Suitable for dry locations; leaves ovate, flowers blue. Has long blooming season.

VERONICA (Cancerwort). New Zealand. All are very showy, free blooming plants and succeed in any good garden soil in a sunny situation. All varieties seem to do very well in California and they are particularly well fitted for grouping and massing for immediate effect. Fine for low hedges.

	EACH	10
6-inch box, 2 to 3 ft.	\$0 90	\$7 50
Potted, 1½ to 2 ft.	75	6 00
Potted, 1 to 1½ ft.	60	5 00
Potted, 6 to 12 in.	50	4 00

Andersonii. 6 feet. Strong grower, leaves long, flowers violet purple.

Andersonii variegata. 6 feet. Leaves glossy green, margined silvery; flowers violet-blue.

Buxifolia. A compact grower, leaves quite small. Flowers when conditions are favorable during the entire year.

Carnea. 5 feet. Leaves small; flowers red.

Elliptica. 5 feet. Leaves small, light green; flowers large, violet, changing to pure white.

Imperialis. 8 feet. Large, dense spikes of amaranth-red or crimson-purple flowers.



Myrtus—Myrtle.
Fragrant White Flowers all
Summer. See Page 76.

CLIMBING AND TRAILING PLANTS

This list comprises all of the best deciduous and evergreen climbing and trailing vines. No home is complete without a few climbing vines to shade the porches and pergolas. Also these vines may be used to splendid advantage as screens to cover unsightly views and add wonderful attractiveness as climbers on old brick walls and elsewhere. The English Ivy is especially desirable for a division fence and for rock work.

AKEBIA. Graceful, hardy climbers with twining stems. Very desirable and do well in exposed situations.

	EACH	10
Potted.....	\$0 50	\$4 00

Lobata. Japan. Flowers purple; showy purple fruit.

Quinata (Five Leaved Akebia). Japan. One of the hardiest; small, deep green foliage; violet-brown flowers; fruit dark purple.

AMPELOPSIS. Hardy, deciduous, and evergreen tendrill creepers; fine for covering stone walls, chimneys and fronts of houses.

	EACH	10
Field grown.....	\$0 60	\$5 00
Potted.....	50	4 00

Quinquefolia (Virginia Creeper). Eastern U. S. Common American Ivy; luxuriant foliage, assuming gorgeous colors in autumn.

Veitchii (Boston Ivy). Japan. Leaves glossy green; glorious autumnal coloring; flowers small; dense clusters of deep blue berries.

New Varieties of Ampelopsis

	EACH	10
Field grown.....	\$0 75	\$6 00
Potted.....	60	5 00

Dumetorum Laciniatum. Vigorous sort with digitated leave sand folioles largely dentated.

Engelmanni. Shorter joints and more rapid growth than Quinquefolia.

Henryana. A remarkably vigorous grower, with large, peculiarly variegated foliage.

Stricta sempervirens. Evergreen; clings well to walls; leaves smaller than Veitchii.



Lonicera (Honeysuckle). Very Fragrant Climbing Vine.

ARISTOLOCHIA SIPHO (Dutchman's Pipe). Eastern U. S. Hardy, twining, deciduous vine; large, heart-shaped leaves and yellowish brown pipe-shaped flowers.

	EACH	10
Potted.....	\$0 75	\$6 00

BIGNONIA. Beautiful plants with large, showy flowers of the most delicate shades and colors.

Capreolata (Cross Vine). Eastern U. S. Very vigorous grower; flowers extra large; beautiful shade of yellowish red; deciduous.

	EACH	10
Potted.....	\$0 75	\$6 00

Cherere. S. America. Flowers 4 inches long, blood-red, but yellow at base; one of the finest; evergreen; will not withstand much cold.

	EACH	10
Potted.....	\$0 60	\$5 00

Grandiflora (Trumpet Vine). Japan. Strong climber; large, orange-scarlet flowers; deciduous foliage.

	EACH	10
Potted.....	\$0 50	\$4 00

Queen of Sheba. A wonderfully rampant growing vine, producing large rosy pink flowers. A superb variety.

Tweediania. S. America. A rampant grower, clinging; small evergreen leaves; flowers canary-yellow; trumpet-shaped. Good for covering walls.

	EACH	10
Potted.....	\$0 50	\$4 00

Venusta. Brazil. Vigorous grower; large, deep orange-colored flowers; will not withstand very much cold; evergreen.

	EACH	10
Potted.....	\$0 60	\$5 00

BOUGAINVILLEA. S. America. A very showy class of climbers, requiring some protection during winter, in the interior. Grows to perfection in many localities in Southern California.

Braziliensis. Taller and with thicker leaves than Glabra Sanderiana. Flowers deep rose, purple to greenish.

	EACH	10
Potted.....	\$0 60	\$5 00

Glabra sanderiana. Evergreen climber; deep rosy flowers in abundance.

	EACH	10
Potted.....	\$0 60	\$5 00

Refulgens. A variety of Braziliensis. Glossy foliage, Bracts brilliant purple mauve.

Spectabilis. Leaves large, bright green; flowers rosy magenta, of a lighter color than the preceding; very much showier.

	EACH	10
Potted.....	\$0 75	\$6 00

Spectabilis lateritia. Flowers larger than preceding, brick-red; very rare.

	EACH	10
Potted.....	\$3 00	

CLEMATIS. Vigorous deciduous climbers; do best in light loamy, well-drained soil.

Jackmani. Large, intense violet flowers; very free. One of the popular varieties.

	EACH	10
Potted.....	\$1 00	

Mad. Edouard Andre. New; flowers large, claret-red; fragrant.

	EACH	10
Potted.....	\$1 00	

Montana (Mountain Clematis). Himalaya. Flowers white, dashed pink; very sweet; ideal for California.

	EACH	10
6-inch box.....	\$0 60	

Paniculata. Slender, vigorous climber, prized for small, white, fragrant flowers. Hardy in the interior.

	EACH	10
Potted.....	\$0 60	

Clianthus Puniceus (Parrot's Bill). Evergreen vine; clusters of brilliant crimson flowers shaped like a parrot's bill.

	EACH	10
6 inch box.....	\$0 75	

COBAEA SCANDENS. Mexico. Very profuse blooming; evergreen; very desirable for arbors and trellises. Flowers bell-like, violet purple; borne all summer.

	EACH	10
Potted.....	\$0 50	\$4 00

DECUMARIA BARBARA (Climbing Snowball). Eastern U. S. Showy deciduous vine; climbing by aerial rootlets; blooms freely; flowers white, fragrant.

	EACH	10
Potted.....	\$0 60	

DOLICHOS LIGNOSUS (Australian Pea Vine). Rampant-growing evergreen; flowers pea-shaped; rosy purple.

	EACH	10
Potted.....	\$0 50	

Lignosus albus. Fully as rampant a grower as the preceding but flowers are white.

	EACH	10
Potted.....	\$0 60	

EVONYMUS JAPONICUS RADICANS (Climbing Evonymus) Japan. Low, procumbent shrub with trailing or climbing branches, sometimes 20 feet long. Well adapted for covering walls, rocks or trunks of trees, clinging by aerial rootlets. Leaves roundish, generally dull green above with whitish veins. Will withstand any great extremes of cold.

	EACH	10
Potted.....	\$0 50	\$4 00

Japonicus radicans argentea marginatus (Variegated Trailing Evonymus). Japan. Light green, silver-edged foliage.

	EACH	10
Balled.....	\$0 60	\$5 00
Potted.....	50	4 00

FICUS REPENS (Climbing Fig). Japan. Evergreen climber; small, roundish, dark green leaves; attaches itself to walls like ivy.

	EACH	10
6-inch boxes.....	\$0 60	\$5 00
Potted.....	50	4 00

HONEYSUCKLE (Lonicera). Comprise a number of well-known, hardy, climbing vines.

	EACH	10
Potted.....	\$0 50	\$4 00

Aureo reticulata (Variegated Leaved). Japan. Flowers yellow; fragrant; leaves netted and veined clear yellow; evergreen.

Chinese (L. standishi). Half evergreen, flowers white and pink; fragrant.

Gigantea superba. S. Europe. Very vigorous grower, with large, downy leaves.

Halliana japonica (Japanese Honeysuckle). Rampant evergreen climber; dark green, ovate leaves; flowers fragrant, white, changing yellow.

Periclymenum (Woodbine Honeysuckle). Asia. Flowers yellow, blotched red above; very fragrant; blooms all summer.

Sempervirens (Trumpet Honeysuckle). Eastern U. S. Rather slow growth; flowers very showy, red outside, orange inside.

Yellow Coral (L. flava). Eastern U. S. Flowers pale yellow, corolla yellow marked purplish outside; abundance of red berries in fall.

IPOMEA LEARI (Blue Dawn Flower). Tropical America. Rapid grower; bell-shaped, deep lilac flowers in clusters of 12 to 30, opening in succession; a wonderful bloomer.

	EACH	10
Potted.....	\$0 50	\$4 00

IVY (*Hedera*). Europe, Africa and Asia. The Ivy is a very valuable plant for covering walls, trunks of trees, for screens, covering walls of cool green-houses and for hanging baskets. It makes a handsome evergreen carpet under trees and may be used to advantage for borders of shrubberies. Its flowers are inconspicuous but there are but few evergreen, climbing foliage plants that will thrive under as many uncongenial conditions as it will.

	EACH	10
Potted.....	\$0 40	\$3 00
Gallon cans, extra strong.....	50	4 00

Canariensis. Rapid and luxuriant grower. Leaves large bright green. A fine variety.

English (*H. helix*). Large, thick, shining leathery leaves.

Maculata major. Large leaves, spotted and striped yellowish white.

Maderienseis var. Leaves edged white.

Variegated (*H. variegata*). Form of "Common English Ivy." Bright green leaves, margined and blotched, creamy shades.

Raegneriana. Handsome and distinct; leaves large, dark green, leathery.

JASMINE (*Jasminum*). These are very interesting plants. Very graceful, and their mass of showy flowers, which in some varieties push out the full length of the stems, makes them very attractive.

	EACH	10
Potted.....	\$0 50	\$4 00
6-inch boxes.....	60	5 00

Gracillimum. Borneo. New evergreen Jasmine; clustered flowers pure white.

Grand Duke. Flowers large, double, white, fragrant.

Grandiflorum (Catalonian Jasmine). India. Free-blooming; flowers pure white, star-shaped, fragrant; foliage delicate; evergreen.

Nudiflorum (Naked flowered Jasmine). China. Drooping branches; enveloped with bright yellow flowers in winter before leaves appear.

Officinale (True Jasmine or Jessamine). India. Slender-growing vine; produces abundance of snow-white, fragrant flowers all summer. The foliage is glossy and clean.

Primulium. China. New variety; same as above, but flowers are fully double the size.

Revolutum (Italian Yellow Jasmine). Asia. Vigorous; rich yellow flowers all summer. Leaves thick, glossy and evergreen.

KENNEDYA OVATA. Australia. Suitable for trellises; flowers pink.

	EACH	10
Potted.....	\$0 60	\$5 00

KUDZU VINE (*Pueraria thunbergiana*). Japan. Immensely vigorous; stems grow 60 feet in one season. Flowers purple, fragrant, pea-shaped.

	EACH	10
Potted.....	\$0 60	\$5 00

LANTANA SELLOWIANA (Weeping or Trailing Lantana.) S. America. Pretty trailing variety; flowers rosy lavender, produced freely.

	EACH	10
Potted.....	\$0 40	\$3 00

MANDEVILLA SUAVEOLENS (Chile Jasmine). Fine summer climber; large clusters of fragrant, waxy, star-shaped blossoms.

	EACH	10
Potted.....	\$0 40	\$3 00

MUEHLENBECKIA COMPLEXA (Wire Vine). New Zealand. Very rapid and showy climber; flowers small, thick, waxy white, followed by transparent, glistening, icicle-like fruits.

M. Platyclada. Interesting plant with broad ribbon-like glossy leaves; flowers white, very showy.

	EACH	10
Potted.....	\$0 50	\$4 00
6-inch box.....	60	5 00

PASSION VINE (*Passiflora*). The Passion Vines are all strong growing evergreen climbers with large, yellowish green leaves and brilliantly colored flowers, some varieties maturing their fruits when grown out of doors and adding to the brilliancy of the plant. They are of exceedingly rapid growth and are well adapted for growing on old-tree stumps, covering walls or buildings. They always excite admiration when in bloom.

	EACH	10
Potted.....	\$0 60	\$5 00

Edulis. Brazil. Rapid grower, with beautiful, glossy green foliage; flowers white, violet base; fruit edible, large as goose egg.

Coerulea. Brazil. Vigorous; hardy; flowers quaintly scented; purple at bottom, white in middle, blue at ends; fruit yellowish.

Large Fruited (*Macrocarpa*). S. America. Flowers white and purple, fruit delicate flavor. A vigorous climber.

Pink (*Tacsonia mollissima*). S. America. Flowers rose color; nearly 3 inches across.

PLUMBAGO. S. Africa. Very free blooming; can be trained as a spreading shrub.

	EACH	10
Potted.....	\$0 40	\$3 00

Capensis. Flowers azure-blue, color most unique.

Capensis alba. Pure white, form of above

RUSSELIA ELEGANTISSIMA. Mexico. Leaves very small, flowers bright red. Very easy cultivation. An excellent basket plant.

	EACH	10
Potted.....	\$0 50	\$4 00

SILK VINE (*Periploca graeca*). S. Europe. Of very rapid growth; deciduous, dark green, glossy leaves; purplish brown flowers. A grand climber. Pods filled with silky seeds.

	EACH	10
Field grown.....	\$0 50	\$4 00
Potted.....	40	3 00

SMILAX (*Asparagus medeoloides*). S. Africa. Climbing perennial, prized for its foliage and twining habit. Flowers small greenish white, fragrant.

	EACH	10
Potted.....	\$0 30	\$2 50

SOLANUM JASMINOIDES (Potato Vine). S. America. Rapid grower; dark green leaves; flowers white, yellow center.

	EACH	10
Potted.....	\$0 50	\$4 00

Wendlandii. Costa Rica. Rapid grower; large, glossy green leaves; immense clusters of lilac-blue flowers all winter. Only hardy in Southern California and well protected locations.

	EACH	10
Potted.....	\$0 75	\$6 00

SOLLYA HETEROPHYLLA (Australian Blue Bell). Hardy evergreen climber; producing numerous brilliant blue bell shaped flowers one-half inch long. Very graceful.

	EACH	10
6-inch boxes.....	\$0 75	\$6 00
Potted.....	60	5 00

SWAINSONA GALEGIFOLIA ALBIFLORA. Australia. Flowers white, resembling Sweet Peas; very profuse bloomers, with delicate, bright green foliage and pure white flowers.

Galegifolia rosea. Same as preceding, but with pink flowers.

	EACH	10
Potted.....	\$0 50	\$4 00

Grayana. Spreading growth. Flowers vary from pink to red.

	EACH	10
6-inch box.....	\$0 60	\$5 00

TECOMA. Beautiful, showy climbing plants, resembling Bignonias.

	EACH	10
6-inch boxes.....	\$0 60	\$5 00
Potted.....	50	4 00

Australis. Australia. Rapid grower; elegant, thick, green foliage and white flowers in greatest profusion make it very desirable.

Capensis (Cape Honeysuckle). S. Africa. Flowers orange-red; about 2 inches long, in terminal racemes.

Jasminoides (Australian Bower Plant). Bright glossy leaves; white flowers, shaded deep purple at throat.

Jasminoides alba. Australia. Very rare; similar to Jasminoides, but with white flowers.

Mackenii. S. Africa. Dark green leaves funnel-shaped flowers; light pink, striped red.

TRUMPET VINE. See *Bignonia grandiflora*.

VIRGINIA CREEPER. See *Ampelopsis quinquefolia*.

VITIS (Evergreen Grape.) S. Africa. Strong grower and prized for its large, round, evergreen leaves. Not very hardy.

	EACH	10
Potted, 3 to 4 ft.....	\$0 75	

WISTARIA. Japan and China. One of the most graceful of climbers; a quick, rapid, vigorous grower; it is surpassed by no plant for covering walls or piazzas, and this, combined with its rich, pendulous panicles of pea-shaped flowers appearing in the spring in great profusion renders this one of the most desirable of deciduous climbing plants.

Brachybotrys. Short clustered Wistaria. Desirable for standards and bushy specimens. Flowers white.

	EACH	10
Price.....	\$0 60	\$5 00

Chinese Double Purple (*W. chinensis flore pleno*). Long clusters of pale, double, blue flowers.

	EACH	10
Price.....	\$1 00	\$7 50

Chinese Purple (*W. chinensis*). Flowers pea-shaped, in pendulous clusters a foot long.

	EACH	10
Price.....	\$0 60	\$5 00

Chinese White (*W. chinensis alba*). Chinese variety; pure white.

	EACH	10
Price.....	\$1 00	\$7 50

Wistaria Chinensis Fragens. Vigorous grower; long racemes of pure white flowers, very fragrant.

Magnifica. Blooms later than any of the other varieties. Flowers lilac with greenish yellow spots borne in short panicles.

	EACH	10
Price.....	\$0 75	\$6 00

Multijuga alba (Loose-clustered Wistaria). Japanese. Flowers white, fragrant, in long racemes.

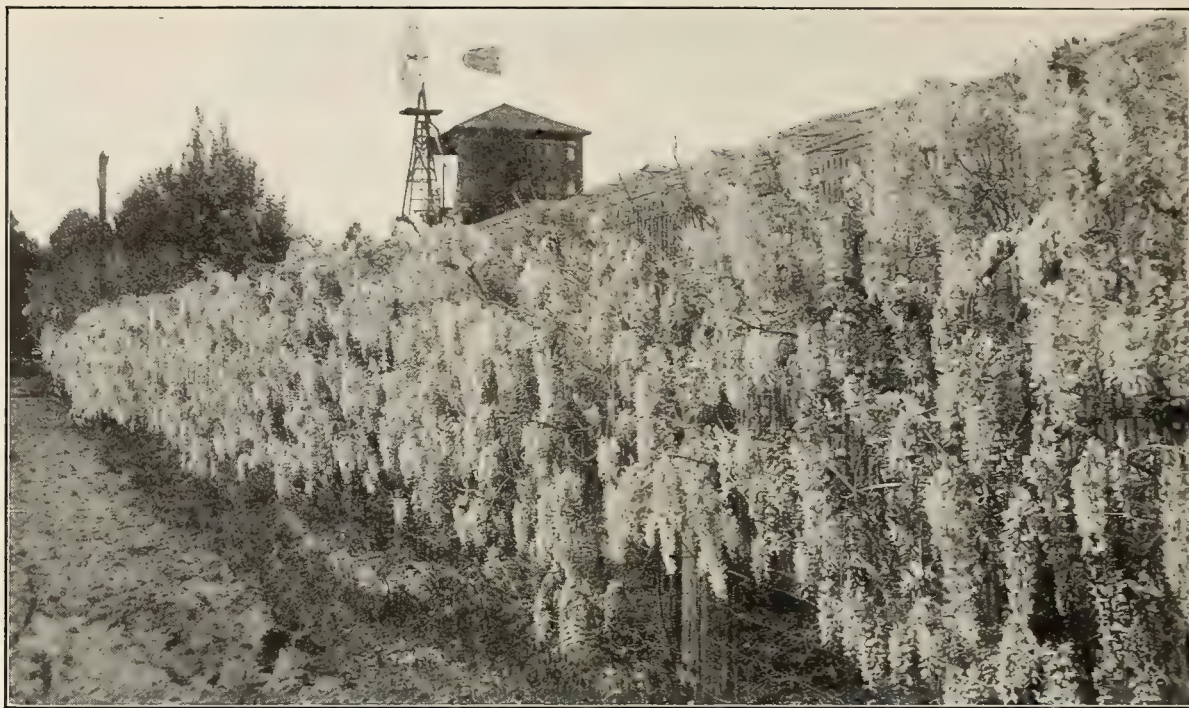
	EACH	10
Price.....	\$1 00	\$7 50

Multijuga Pink (Pink-Flowering Wistaria). Japanese. Same as preceding, but pink flowers; the racemes will average from two to four feet long; very rare.

	EACH	10
Price.....	\$2 00	

Multijuga Purple. Japanese. Racemes longer and looser than Chinensis; flowers smaller.

	EACH	10
Price.....	\$1 25	



Wistaria—multijuga purple. One of the Most Desirable Climbing Vines. See Page 79.

PALMS

No plants are more decorative, for indoors or out. The smaller and more tender varieties "set off" interior decorations, while the larger and hardier varieties are invaluable for garden, lawn and avenue. We carry a large stock in boxes, tubs and cement pots, which have been taken from the open ground and are well established. These can be used either for porch decorations or planted out in the open. Such plants give an immediate effect, and never go back, when transplanted.

All marked with an asterisk (*) are for indoors and conservatory decoration.

ARECA BAUERII. E. Africa. 30 feet. A graceful and beautiful palm. Foliage bright glossy green; very desirable house palm.

Cement pots, 3 to 5 ft. \$3 00 to \$5 00

CHAMAEROPS (Trachycarpus). Hardy fan-leaved palms, with dark, hairy trunks, and very slender leaf stalks.

	EACH	10
Tubs and boxes, 6 to 8 ft.	\$10 00	
Tubs and boxes, 4 to 5 ft.	6 00	\$50 00
Tubs and boxes, 3 to 4 ft.	5 00	40 00
Tubs and boxes, 2 to 3 ft.	3 50	30 00
Cement pots, 4 to 5 ft.	6 00	50 00
Cement pots, 3 to 4 ft.	5 00	
Cement pots, 2 to 3 ft.	3 50	
Balled, 6 to 8 ft.	9 00	80 00
Balled, 5 to 6 ft.	7 00	60 00
Balled, 4 to 5 ft.	5 00	40 00
Balled, 3 to 4 ft.	3 50	30 00
Balled, 2 to 3 ft.	2 00	15 00
Potted, 1½ to 2 ft.	1 00	

Excelsa (Windmill Palm). Asia. 30 feet. The hardiest we have; leaves fan-shaped, deeply cut, very symmetrical.

Humilis (Dwarf-growing Fan Palm). Mediterranean region. 20 ft. Divided fan-shaped leaves; stems thorny. One of the hardiest.

Nepalensis. Himalayas. Resembles Excelsa in habit, but is more dwarf; leaves smaller, stiff, more rounded; leaf-stalk shorter and stouter; leaves deep, dark green.

New Varieties of the Humilis Type

Arborea	Canariensis	Gracilis
Argentea	Cochinchinensis	Robusta
Artosa	Farinosa	Spinosa
	Tomentosa	

COCOS. Probably the most graceful of Palms; the type includes the Coconut of Commerce. While the Australis is very hardy the Plumosa is somewhat tender and should only be planted out in very mild climates. EACH 10

Tubs and boxes, 6 to 8 ft.	\$10 00	
Tubs and boxes, 5 to 6 ft.	8 00	
Tubs and boxes, 4 to 5 ft.	6 00	
Cement pots, 4 to 5 ft.	7 00	
Cement pots, 3 to 4 ft.	6 00	
Balled, 4 to 5 ft.	5 00	\$40 00
Balled, 3 to 4 ft.	4 50	35 00
Balled, 2 to 3 ft.	4 00	30 00

Except Plumosa.

Australis (Pindo Palm). Paraguay. 15 feet. Slow-growing, graceful, hardy; leaves silvery green. Fine for small gardens

Bonneti. S. America. 15 feet. Hardy; gray green; excellent for house culture.

Campestris. Brazil. 15 feet. Similar to Australis except leaves more recurved and spiny.

***Plumosa.** Brazil. 40 feet. A quick grower; slender, smooth trunk; plummy, graceful leaves. Very extensively used in the southern part of the State for avenue planting. EACH

Balled, 8 to 10 ft.	\$10 00
Balled, 6 to 8 ft.	8 00
Balled, 5 to 6 ft.	7 00
Balled, 4 to 5 ft.	6 00

***CORYPHEA AUSTRALIS.** Australia. 6 feet. Handsome Fan Palm. Leaves dark green, petioles heavy; suitable for hall decoration. EACH

Boxed, 3 to 4 ft.	\$5 00
Boxed, 2 to 3 ft.	4 00
Potted, 1 to 1½ ft.	1 00

CYCAS REVOLUTA (Sago Palm). Japan. 10 feet. A magnificent plant; many beautiful, pinnate, dark green leaves, uncurling from the top of the stem like ostrich feathers. These Palms are grown in pots and tubs only; quotations are based more on the number of fronds or leaves than on the size of the container. EACH

14-inch boxes	\$9 00 to \$12 00
12-inch tubs	7 00 to 9 00
10-inch pots	4 00 to 6 00
8-inch pots	2 50 to 3 50
6 and 7-inch pots	1 50 to 2 50
4 and 5-inch pots	1 25 to 1 50

ERYTHEA. These beautiful and very hardy palms have never received the attention they are entitled to, no doubt because they are so little known. They are very hardy, graceful and are worthy of wide dissemination. EACH 10

Tubs and boxes, 8 to 10 ft.	\$10 00
Tubs and boxes, 6 to 8 ft.	7 50
Tubs and boxes, 5 to 6 ft.	6 00
Tubs and boxes, 4 to 5 ft.	5 00
Tubs and boxes, 3 to 4 ft.	3 50
Tubs and boxes, 2 to 3 ft.	3 00
Cement pots, 3 to 4 ft.	5 00
Balled, 3 to 4 ft.	3 00
Balled, 2 to 3 ft.	2 50
Balled, 1 to 1½ ft.	1 50

Armata (Blue Palm). Lower California. 40 feet. One of the most graceful and striking of Fan Palms; color of leaves gives the plant a silvery blue hue. Quite distinct and hardy.

Brandegei (Brahea brandegei). Lower California. 125 feet. New; tallest growing of fan-leaved Palms; hardy.

Edulis (Guadalupe Island Palm). 50 feet. Like California Fan Palm; stem slender, graceful; leaves deep green, no filaments.

JUBAEA SPECTABILIS (Wine or Honey Palm). Chili. 20 feet. It is one of the hardiest of palms and looks something like a Phoenix, but it is more spreading and of a dwarfer habit. It is readily distinguished by the pinnae which revert to the petiole stalk and which are also irregularly arranged, giving the plant a feathery appearance. Truly a magnificent palm, and one always commanding admiration. Makes a very massive trunk at maturity.

	EACH
Cement pots, 3 to 4 ft.	\$6 00
Tubs and boxes, 4 to 5 ft.	6 00
Tubs and boxes, 3 to 4 ft.	5 00
Tubs and boxes, 2 to 3 ft.	4 00
Balled, 5 to 6 ft.	7 50
Balled, 4 to 5 ft.	6 00
Balled, 3 to 4 ft.	4 00
Balled, 2 to 3 ft.	2 50

KENTIA (Howea). Lord Howe Island. More extensively used for house decoration than any other Palm. Their stateliness and graceful, drooping foliage make them invaluable.

For extra large specimen plants write for prices.

	EACH
Potted, 7 ft.	\$9 00 to \$15 00
Potted, 6 ft.	8 00 to 10 00
Potted, 5 ft.	7 00 to 9 00
Potted, 4 ft.	5 00 to 7 00
Potted, 3 ft.	4 00 to 5 00
Potted, 2 to 3 ft.	2 50 to 3 50
Potted, 1½ to 2 ft.	1 75 to 2 50

***Belmoreana** (Curly Palm). Valuable for house; elegant, pinnate leaves, stems gracefully arched. Large sizes are specimen plants.

***Forsteriana** (Thatch-Leaf Palm). Robust growth; for house culture only. Large sizes are specimen plants.

***LIVISTONA CHINENSIS** (*Latania borbonica*) China. 6 feet. Leaves large, fan-shaped, rich, dark green. Popular for house decoration.

	EACH
Tubs and boxes, 6 ft. spread . . .	\$7 00 to \$9 00
Tubs and boxes, 5 ft. spread . . .	6 00 to 8 00
Tubs and boxes, 4 ft. spread . . .	5 00 to 7 00
Tubs and boxes, 3 ft. spread . . .	3 50 to 5 00
Potted, 3 to 4 ft.	3 00
Potted, 2 to 3 ft.	2 50
Potted, 1½ to 2 ft.	2 00

PHOENIX. It is needless to say that there are few palms which have done more to add to the semi-tropical appearance of our landscapes than this majestic family of palms. Their massive trunks with their ascending, arching and pendulous pinnatifid leaves causes them to excite admiration wherever seen.

Except Roebelini see Special Price.

	EACH	10
Tubs and boxes, 10 to 12 ft.	\$20 00	
Tubs and boxes, 8 to 10 ft.	15 00	
Tubs and boxes, 6 to 7 ft.	6 00	
Tubs and boxes, 5 to 6 ft.	5 00	
Tubs and boxes, 4 to 5 ft.	4 00	
Tubs and boxes, 3 to 4 ft.	3 00	
Tubs and boxes, 2 to 3 ft.	2 00	
Cement pots, 4 to 5 ft.	5 00	
Cement pots, 3 to 4 ft.	4 00	
Cement pots, 2 to 3 ft.	3 00	
Balled, 5 to 6 ft.	3 00	\$25 00
Balled, 4 to 5 ft.	2 50	20 00
Balled, 3 to 4 ft.	2 00	15 00
Balled, 2 to 3 ft.	1 50	12 50

Canariensis (Canary Island Palm) 40 feet. Handsomest of hardy Palms; leaves pinnate, deep dark green; effective for lawns.

Dactylifera (Fruiting Date Palm). Arabia. 100 feet. Trunk slender; leaves decidedly upright; silvery green. Produces the date of commerce.

Leonensis. Africa. 40 feet. Strong grower; trunk thick and heavy. Fronds blue-green, spiny at base.

***Pumila.** China. 20 feet. Dwarf; graceful, arching branches from slender trunk. Never more than 6 inches in diameter.

Sylvestris (Wild Date Palm). India 10 feet. Leaves long, arched, bluish green; similar to Date Palm of commerce.

***Roebelini.** 5 feet. Burmah. Slow grower and in shape similar to *Canariensis* except that leaves are finer. Very dainty in appearance. Leaves light green in color, with gracefully arched stems.

EACH

Potted, 1½ to 2 ft. \$4 00

***RHAPIS FLABELLIFORMIS** (Ground Rattan). Japan. Pretty, cane-like Palm, which suckers at roots like bamboo. Many-fingered, dark green leaves, at ends of reed-like stems.

EACH

Potted \$1 50 to \$10 00

***Humilis** (Low-growing Palm). China. Similar to preceding; stems thicker and shorter and the pinnate leaves are broader.

EACH

Potted \$1 50 to \$6 00

SABAL (The Cabbage Palms). A very hardy, graceful family; not very particular as to soils.

EACH 10

Tubs and boxes, 4 to 5 ft. \$5 00

Tubs and boxes, 3 to 4 ft. 4 00

Tubs and boxes, 2 to 3 ft. 2 50

Balled, 3 to 4 ft. 2 50 \$20 00

Balled, 2 to 3 ft. 2 00 15 00

Potted, 1½ to 2 ft. 1 50 12 50

Adansoni (Dwarf Palmetto). South U. S. 6 feet. Leaves dark, rich green; smooth-edged stems. Flower spikes rise 6 to 7 feet above leaves. Withstands temperature of 10 degrees Fahrenheit.

Blackburnianum. W. Indies. 40 feet. Distinct, slow-growing variety; leaves long, bluish green.

Palmetto (Cabbage Palmetto). South U. S., 80 feet. The Florida Palmetto; leaves long heart-shaped, deeply cut; hardy and desirable.

***SEAFORTHIA ELEGANS** (Australian Feather Palm). N. S. Wales. 10 feet. One of the best for conservatory or greenhouse; pinnate leaves 2 to 10 feet in length, dark green, perfectly smooth.

EACH

Balled, 5 to 6 ft. \$6 00 to \$7 50

Balled, 4 to 5 ft. 5 00 to 6 50

Balled, 3 to 4 ft. 4 00 to 5 00

WASHINGTONIA. Tall-growing, fan-leaved varieties, native to California and Northern Mexico.

EACH 10

Tubs and boxes, 6 to 8 ft. \$6 00

Tubs and boxes, 5 to 6 ft. 4 00

Tubs and boxes, 4 to 5 ft. 3 00

Tubs and boxes, 3 to 4 ft. 2 00

Tubs and boxes, 2 to 3 ft. 1 50

Balled, 6 to 7 ft. 4 00 \$30 00

Balled, 5 to 6 ft. 3 00 25 00

Balled, 4 to 5 ft. 2 50 20 00

Balled, 3 to 4 ft. 1 50 10 00

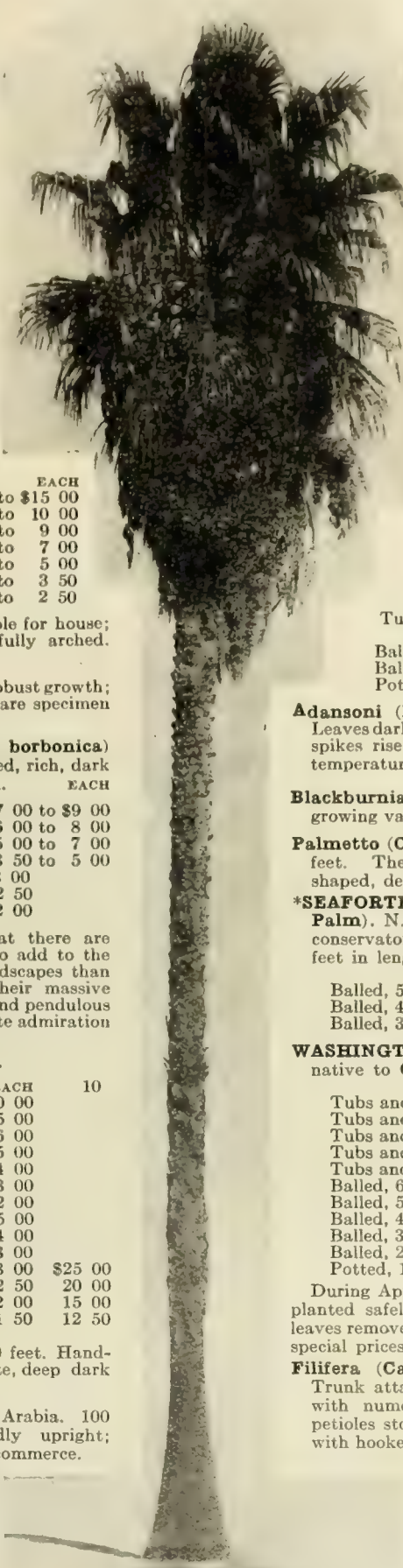
Balled, 2 to 3 ft. 1 00 8 00

Potted, 1 to 1½ ft. 50 4 00

During April and May, Washingtonias can be transplanted safely, taken up with naked roots, with all leaves removed except the center shoot. Write us for special prices on this stock.

Filifera (California Weeping Palm). 80 feet. Trunk attains diameter of 4 feet; leaves fan-shaped, with numerous divisions and whitish filaments; petioles stout, smooth, 5 to 6 feet long, margined with hooked spines.

Robusta (*W. gracilis* or *sonorea*). California. 100 feet. A distinct type; leaves drooping, much greener than preceding and with fewer white filaments. Petioles more heavily spined; much more rapid grower than *W. filifera*; trunk much more slender than that variety.



Washingtonia robusta
Leaves Fan-shaped, Tall-Growing. Native California Palm

AGAVES, DASYLIRIONS, DRACAENAS, YUCCAS

AGAVE AMERICANA (Century Plant). Tropical America. 6 feet. The well-known "Century Plant;" glaucous green leaves. Not difficult to grow, sandy loam being the best soil to use.

Americana variegata. Tropical America. 6 feet. Variegated form of preceding; leaves edged rich yellow.		
	EACH	10
Potted and tubs, 2 to 3 ft.	\$2 50	
Potted, 1½ to 2 ft.	75	\$6 00
Potted, 1 to 1½ ft.	60	5 00
Balled, 4 to 5 ft.	3 00	25 00
Balled, 3 to 4 ft.	2 00	15 00
Balled, 2 to 3 ft.	1 50	12 50
Balled, 1½ to 2 ft.	1 00	7 50

DASYLIRION. Mexico. Very ornamental desert plants, with slender spiny leaves; flowers in tall, dense spikes.

	EACH	10
Balled, 2 to 3 ft.	\$2 00	\$15 00

Glaucophyllum. 12 feet. A grand plant; compact head, fringed at edges with small teeth.

Graminifolium (D. longifolium). 8 feet. Long, narrow leaves, drooping to ground; very desirable for lawn; also excellent for house decorations.

DRACAENA. Australis (Cordylina australis D. indivisa), New Zealand. 20 feet. Fine avenue and street trees for the coast; do not do well in the interior.

	EACH	10
Tubs and boxes, 4 to 5 ft.	\$ 3 50	
Tubs and boxes, 3 to 4 ft.	3 00	
Tubs and boxes, 2 to 3 ft.	2 50	
Cement pots, 2 to 3 ft.	3 00	
6-inch box, 2 to 3 ft.	1 50	
Potted, 1½ to 2 ft.	1 00	\$7 50
Potted, 1 to 1½ ft.	75	6 00

NOLINA PARREII. Mexico. 20 feet. Like Dasyllirion, except their leaves are unarmed.

	EACH	
Potted, 1 to 1½ ft.	\$1 00	\$2 50

PANDANUS UTILIS (Screw Pine). Madagascar. 60 feet. So called because of screw-like arrangement of leaves around stalk; leaves green, edged with small red spines.

	EACH	
Potted.	\$1 00	\$2 50

YUCCA. Very effective palm-like plants, with spikes of white flowers; require little care, once established.

	EACH	
Balled, 4 to 5 ft.	\$2 00	
Balled, 3 to 4 ft.	1 50	
Balled, 2 to 3 ft.	1 00	

Angustifolia. Rocky Mountain region. Tall-growing; long, narrow, white-margined leaves; spikes of immense creamy flowers.

Baccata (Spanish Bayonet). Arizona. Low, compact grower; leaves rigid; yellowish green flowers. Flower cluster 5 to 6 feet long.

Filamentosa (Adam's Needle). Southeast U. S. Compact grower; dark green leaves and majestic spikes of yellowish white flowers.

Whipplei. California. Very fine; has a flower-like stem 8 feet high.

BAMBOOS (Bambusa)

Very useful and ornamental; they seem to do well in all reasonably good soils, and should be planted by every farmer. Decorative house plants, fine for lawns or groupings. Whenever used, they should be given warm, rich soil. All varieties respond quickly to good treatment.

Except Dendrocalamus and Quillioi.

	EACH	10
Boxed, 4 to 5 ft.	\$1 50	\$12 50
Boxed, 3 to 4 ft.	1 25	10 00
Balled, 6 to 8 ft.	2 00	15 00
Balled, 5 to 6 ft.	1 50	12 50
Potted, 2 to 3 ft.	1 00	7 50

Arundinaria japonica (Arrow Bamboo). Japan. 12 feet. Extensively used for supporting pot plants. Will withstand severe cold.

Bambusa alphonsei karri. Japan. 10 feet. Yellow and green stripes on stem. Very ornamental.

Bambusa aurea striata. Japan. 10 feet. Dwarf, highly ornamental. Plant bushy with yellow variegated leaves.

Bambusa henonis (Volatile Bamboo). Japan. 15 feet. Thick and bushy. Excellent windbreak; feathery foliage, on graceful, arching canes.

Bambusa vulgaris (Common Bamboo). India. 70 feet. Tall, quick growing; one of the best for tropical effects.

Bambusoides. 10 feet. Slender yellow stems; leaves bright green. Rare.

Phyllostachys mitis (Noble Bamboo). Japan. 30 feet. Stem often 6 inches in diameter, used for furniture, etc.; young sprouts edible.

Phyllostachys taihochiku. Japan. Highly ornamental. Slender stem grows to height of 10 feet. One of the best.

Phyllostachys viridis glaucescens. Japan. 25 feet. One of the hardiest. Stems often 2 inches in diameter; one of the most graceful of the Bamboos and deserving of wide culture.

SPECIAL VARIETIES OF BAMBOOS

Phyllostachys quillioi (Giant Bamboo). Japan. 75 feet. Stems 4 to 5 inches at base; leaves largest of all. Leaves dark green, often spotted brown, glaucous on the under side.

	EACH	
Boxed, 6 to 8 ft.	\$2 50	
Boxed, 5 to 6 ft.	2 00	
Boxed, 4 to 5 ft.	1 75	

Dendrocalamus latifolius. Japan. 40 feet. Erect stems; broad, long leaves; rapid grower.

	EACH	
Boxed, 4 to 5 ft.	\$5 00	

DECORATIVE, BEDDING AND BORDER PLANTS

When price is given from one price to another price (as for instance, \$1.00 to \$2.50 each) in the same sized pot, it is because the plants vary in size and shape. If customers will advise about the price they wish to pay for a plant, we will send the best specimen plant we can for the amount mentioned.

AMARYLLIS. Under this head we have a fine collection of hybrids. Flowers attain large proportions and a large range of colors and variations.

	EACH	10
Potted.	\$0 40	\$3 00

ABUTILON (Flowering Maple). Large, maple like leaves, golden and crimson flowers. Assorted varieties.

	EACH	
Potted.	\$0 30	

ACHANIA MALVAVISCUS (Turk's Cap). Vigorous-grower, similar to Abutilons; flowers brilliant crimson.

	EACH	
Potted.	\$0 35	

ACHRYANTHES VERSHAFFELTI. Very desirable for low borders; foliage rich and highly colored.

	EACH	10
Potted.	\$0 25	\$2 00

ALTERNANTHERA AUREA NANA. Handsome, dwarf, yellow foliage plant.

Paronychioides major. Bright red foliage plant. The best of that color.

	EACH	
Potted.	\$0 30	

ANTHERICUM VITTATUM VARIEGATUM (Phalangium lineare). Leaves dark green, beautifully marked creamy white.

	EACH	
5-inch pots.	\$0 60	
3-inch pots.	40	

ARUNDO DONAX. A tall, graceful reed. Excellent for immediate effects in aquatic scenes and for hiding unsightly objects.

	EACH	10
Potted.	\$0 60	\$5 00

ASPARAGUS

	EACH	
10-inch pots.	\$1 50	\$2 50
7 and 8-inch pots.	1 25	2 00
6-inch pots.	75	1 25
5-inch pots.	50	75
4-inch pots.	35	50

Plumosus. Beautiful climbing plant; bright green, arching, feathery foliage.

Sprengeri. Useful for decorative purposes; white flowers; red berries; fronds rich green, valuable for cutting, remaining fresh for weeks; an excellent house plant.

ASPIDISTRA LURIDA. Foliage plant; long, dark green leaves; odd purplish flowers.

Lurida variegata. Similar to the preceding; leaves broadly marked with white.

	EACH	
10-inch pots.	\$3 00	\$5 00
8-inch pots.	2 50	3 50
6-inch pots.	1 50	2 50
5-inch pots.	1 00	1 50

BANANA, ABYSSINIAN (Musa ensete). Magnificent foliage plants; very rapid growth.

	EACH	
Boxed, 6 to 8 ft.	\$ 8 00	
Boxed, 5 to 6 ft.	7 00	
Boxed, 4 to 5 ft.	6 00	
Potted, 1½ to 2 ft.	2 50	

BEGONIA. Showy foliage plants with many-colored, delicate flowers. We have a fine collection.

FLOWERING VARIETIES

	EACH	
Potted.	\$0 35	\$1 50

Rex. Very large, showy leaves.

	EACH	
4 to 6-inch pots.	\$0 75	\$2 00

CARNATIONS (*Dianthus caryophyllus*). The exquisite and free blooming quality of these plants keeps them in popular favor. We offer only the best sorts. After Oct. 1st only large potted plants ready for winter bloom available.

Beacon. Brilliant scarlet.

Bonora. Handsome variegated sort. White streaked with red. Large.

Enchantress. Beautiful shell-pink variety of superior quality.

Eldorado. A good yellow.

Matchless. Large pure white, attractively fringed. Free bloomer.

Potted large plants. \$0 50 to \$1 00

Potted small plants (after Mar. 1) 25

CHRYSANTHEMUMS, Assorted Varieties. Write for list of varieties.

3-inch pots. \$0 30 to \$2 00

CYPERUS ALTERNIFOLIUS (Umbrella Plant). Erect, jointless stems; long, narrow leaves, umbrella-shaped requires plenty of water.

5-inch pots. \$0 50 \$4 00

Egyptian Paper Plant (*C. Papyrus*). Tall erect stems, 4 to 8 ft. high with tuft of narrow drooping leaves. Excellent for aquariums and damp soils.

Potted. \$0 40

COLEUS. Foliage plants of wonderfully rich varied colors. Excellent house plants.

Potted. \$0 25 to \$2 00

DAISY, ENGLISH (*Bellis perennis*). Pretty plants; numerous white to pink flowers, on stems 6 inches long.

Price. \$0 05 \$0 40 \$3 00

DORYANTHES PALMERI (Spear Lily). Graceful long broad leaves. Flowers bright scarlet outside, whitish within.

Potted, 1 to 1½ ft. \$1 50

EULALIA. Tall, ornamental grasses, remarkably hardy; universal favorites for bedding.

Potted, 1½ to 2 ft. \$0 60 \$5 00

Potted, 1 to 1½ ft. 50 4 00

Evergreen. Larger and stronger than *E. Japonica*. For seaside locations.

Gracilis. Similar to *E. Japonica*, but with much narrower leaves.

Japonica (Japanese Eulalia). Narrow, drooping leaves, 6 to 9 feet long.

Japonica variegata (Japanese Striped Grass). Long, narrow, white-striped leaves, 4 to 6 feet long.

Japonica zebrina (Japanese Banded Grass). Resembles preceding, but marked across the leaves.



Romneya coulteri—California Tree Poppy. No Native Shrub Surpasses this one in Beauty. See Page 84.

FERNS: Prices vary according to quality and number of fronds per plant

Leading popular varieties as follows:

	EACH
10 to 12-inch baskets	\$2 00 to \$6 00
10-inch pots	3 50 to 5 00
8-inch pots or pans	1 50 to 3 00
6-inch pots or pans	1 00 to 1 50
4-inch pots	60 to 1 00
3-inch pots	35 to 50
2½-inch pots	25 to 35
Assorted fern dishes	1 00 to 2 00

Adiantum cuneatum (Maiden Hair Fern).

Adiantum elegantissima.

Adiantum formosan.

Adiantum gloriosa.

Aspidium taussimense.

Asplenium nidus avis (Bird Nest Fern).

Cyrtomium falcatum (Holly Fern).

Gymnogramme sulphurea.

Lycopodium.

Nephrolepis exaltata (Sword Fern).

N. exaltata bostoniensis (Boston Fern).

N. exaltata elegantissima.

N. harrisi.

N. hibernica.

N. pearsoni.

N. whitmani.

Nephrodium molle.

Polypodium.

Pteris in assortment.

Woodwardia, Pteris and Nephrolepis.

Native California Ferns.

Potted. \$0 50 to \$1 00

FRAGARIA CHILENSIS (Sand Strawberry). A fast growing native plant with small dark green leaves and white flowers. An excellent ground cover requiring very little water. Grows well even on poorest of soils.

Plants. \$0 10 \$0 75 \$5 00

FUCHSIA, Assorted. We have a fine collection, including the very best varieties.

Potted. \$0 35 to \$1 00

GERANIUMS, Single, Double and Ivy-Leaved. We have used the utmost care in the selection, limiting our list to improved types. Assorted varieties.

Potted. \$0 25 to \$0 60

GERBERA JAMESONII (Transvaal Daisy). Flower scarlet, similar in shape and size to Shasta Daisy.

Potted. \$0 40

HELIOTROPE (*Heliotropium*). Rich, fragrant flowers; dark green leaves. Assorted varieties.

Potted. \$0 40 \$3 50

HEUCHERA SAGUINEA (Coral Bells). A hardy border plant with small red flowers. Blooms from spring till fall.

Potted. \$0 30

HIBISCUS ROSEA-SINENSIS, Chinese Varieties. Bright, glossy leaves; gorgeous flowers. Assorted colors.

Potted, 2 to 3 ft. \$0 30 to \$1 50

IBERIS SEMPERVIRENS (Candytuft). Perennial; grows to height one foot. Flowers white in elongated racemes.

Potted. \$0 30 \$2 50

IRESENE. Popular bedding plant. In demand on account of their highly colored flowers and stems.

Potted. \$0 30 \$2 50

JERUSALEM CHERRY (*Solanum Pseudo-Capsicum*). 3 feet. Small compact leafy shrub; flowers white followed by showy scarlet fruit which persist for long time. Excellent indoor pot plant.

Potted. \$0 25 to \$1 50

KOREAN VELVET GRASS (*Zoysia pungens*). A rapid growing grass that can be grown with very little water and requires no mowing. Will grow well in sun or under the dense foliage of evergreen trees. It resembles very much a piece of green velvet, hence the name. Very valuable for rockery work.

Per flat, about 13 inch by 16 inch square. \$3 00

LANTANA. We offer the best of the new varieties

Potted. \$0 30 to \$0 60

LAVENDULA VERA (Lavender). The true sweet Lavender. Fragrant blue flowers. July and August.

Potted. \$0 30

LOTUS. One of the best plants for hanging baskets. Leaves thread-like; foliage silvery gray; flowers crimson, in long clusters.

Potted. \$0 50

MALLOW. In various colors. Flowers six inches across. Form of Perennial Hibiscus.

Potted. \$0 60

MARGUERITE (*Chrysanthemum frutescens*). Paris Daisy. We grow both the white and yellow varieties.

Potted. \$0 40 \$3 50

NEW ZEALAND FLAX

6-inch box, 2 to 3 ft. \$1 25

Potted, 1 to 1½ ft. 60

New Zealand (*Phormium tenax*). Large, erect, dark green leaves, with narrow, reddish brown margin.

Variegated (*P. tenax variegata*). Leaves shorter than preceding; marked with broad, creamy stripes.

OPHIOPOGON JAPONICUS (Snakes Beard). Rich dark green drooping grass; violet purple flowers. Very desirable for border edgings.			
	EACH	10	
Potted.....	\$0 25	\$2 00	
ORIENTAL POPPY (Papaver Orientale). Hardy perennial with many thick leafy stems; flowers very large deep crimson; black blotch on each petal.			
	EACH	10	
Plants.....	\$0 25	\$2 00	
PAMPAS GRASS (Gynerium argenteum). Leaves long, narrow, drooping; silvery plumes.			
Argenteum roseum. Pink. Like preceding; plumes are fleshy pink.			
	EACH	10	
Clumps.....	\$0 60	\$5 00	
PANSY (Viola tricolor). Extra choice varieties, from best imported seed.			
	EACH	10	100
Transplanted in flats.....	\$0 10	\$0 40	\$3 00
PELARGONIUM (Lady Washington Geraniums). The best of the late introductions.			
	EACH		
Potted.....	\$0 25	\$1 00	
PHILODENDRON BINPINNATIFIDUM. Magnificent foliage plant. Leaves dark, rich green color and more or less notched at the sides. A fine house plant or for conservatory decoration.			
	EACH		
Potted.....	\$1 50	\$15 00	
PHLOX, Assorted Varieties. Large range of colors; early summer till late fall.			
	EACH	10	
Potted.....	\$0 30	\$2 50	
POINSETTIA PULCHERRIMA. The well-known plant; popular in Southern California. Long stems, large leaves and great scarlet bracts surrounding flowers, which appear in winter.			
	EACH		
Potted.....	\$0 60	\$2 00	
PRIMROSE (Primula obconica). Free flowering; dark green foliage, stems of large flowers, varying from white to crimson.			
	EACH	10	
Potted.....	\$0 30	\$2 50	
ROMNEYA COULTERI. Matilija Poppy (California Tree Poppy). Adapts itself to a wide range of locations. One of the most beautiful of the numerous list of native California plants. The petals are of the purest white, the stamens in the center being a rich yellow. Very fragrant and blooms continuously all summer.			
	EACH	10	
Potted.....	\$1 00	\$7 50	
SALVIA (Sage). Handsome, rapid-growing; blooming all summer. A genus comprising hundreds of varieties. Our collection comprises a few of the best sorts.			
	EACH	10	
Potted.....	\$0 30	\$2 50	
SANSEVERIA (Zeylanica). Leaves 1 to 3 feet long, sword-shaped; variegated with grayish white cross markings; flowers greenish white			
	EACH		
Potted.....	\$0 60	\$1 25	
SANTOLINA INCARIA (Lavender Cotton). Stands extreme drought and cold; valuable for borders; foliage silvery.			
	EACH	10	
Potted.....	\$0 20	\$1 50	
Transplanted in flats, \$3 50 per 100.			
SHASTA DAISY (Chrysanthemum maximum).			
	EACH	10	
Clumps.....	\$0 35	\$3 00	
THYME (Thymus). We grow the common Thyme, with plain green foliage, and also the variegated variety.			
	EACH	10	
Potted.....	\$0 25	\$2 00	
TRADESCANTIA (Wandering Jew). Assorted varieties; fine for hanging baskets, jardiniere and vases.			
	EACH	10	
5-inch pots.....	\$0 25	\$2 00	
TRITOMA UVARIA (Red-Hot Poker). Late-blooming; bright orange-scarlet flowers on long, straight stems.			
	EACH	10	
Balled, 2 to 3 ft.....	\$0 40	\$3 50	
VERBENA. The following named varieties we offer are all mammoth type of flowers, producing large heads far superior to old sorts:			
Beauty of Oxford. Deep rosy pink.			
Crimson King. Color blood and velvety in texture.			
Lavender Queen. Beautiful rich lavender.			
Snowflake. Largest of all white sorts.			
	EACH	10	100
Potted.....	\$0 10	\$0 75	\$5 00
Verbena Common.			
	EACH	10	100
Transplanted in flats.....	\$0 50	\$3 00	
VINCA MAJOR (Periwinkle). Trailing plant; deep, glossy green leaves; trumpet-shaped, pale blue flowers. As a ground cover and for covering rocks in shady locations, are recommended highly.			
Major variegata. Similar to the preceding; leaves have broad, creamy margin.			
Minor. Similar to Major except leaves smaller and flowers lilac blue.			
	EACH	10	
Potted.....	\$0 25	\$2 00	
VIOLET (Viola odorata).			
	EACH	10	100
Transplanted in flats	\$0 10	\$0 40	\$3 00

Decorative, Bedding, Border
Plants and Roses Lend
Attractiveness to the Country
Home.

California. Single, blue violet; profuse bloomer; very fragrant.

Giant. Flowers of largest size, true violet blue, long stems, very fragrant.

Swanley White. Large double-white flowers.

Bulbs and Tuberous-Rooted Plants

CALADIUM ESCULENTUM (Elephant's Ear). Enormous heart-shaped leaves, growing luxuriantly in very moist situations in summer.

Clumps.....EACH \$0 40 to \$0 60

CALLA LILY (Alba maculata). Profuse bloomer; pure white flowers.

Potted.....EACH \$0 25 \$2 00

CANNAS. Very attractive plants with large green leaves, often shaded with red and crimson. Flowers in a great array of colors and appearing from spring until fall. For producing tropical garden effects and for borders they are invaluable. Out of the many hundreds of varieties introduced in recent years, we have only selected those which are typical of the improved sorts. Those who order from us will, we are quite sure, commend our selection. Our trial grounds were a mass of beauty and from the many varieties we tested we list 15 sorts which our Mr. Roeding has carefully selected as the very best and most beautiful. You will not be disappointed. Many of these are equal to the rare sorts sold in the East up to \$5 00 each.

Tubers.....EACH \$0 30 \$2 50 \$20 00

Alfred Mauther. Crimson scarlet. Color intense and rare. 5 inches across. Green foliage with variegations of bronze. Height, 5 feet.

Eureka. Creamy white changing to clear pure white. Flowers 5½ to 6 inches across. Many have a suggestion of old rose at the heart showing through at base of petals. Foliage green uniform in color. Best known white variety. Height, 5 feet.

Frank Bush. Foliage light green. Flowers pink and salmon with yellow dots in center, 4 inches across. Very attractive. Height, 4 feet.

Hungaria. A superb variety. Dark green foliage. Flowers, rose pink blended into creamy white at the heart which is mottled with dark rose and yellow. 5 inches across. Height, 4 feet.

Ludwig Kapt. Deep golden yellow touched with red. Darker at edges. Inclined to be mottled, the gold predominating. Foliage, green, darker at edges. 5-inch flower. Height, 6 feet.

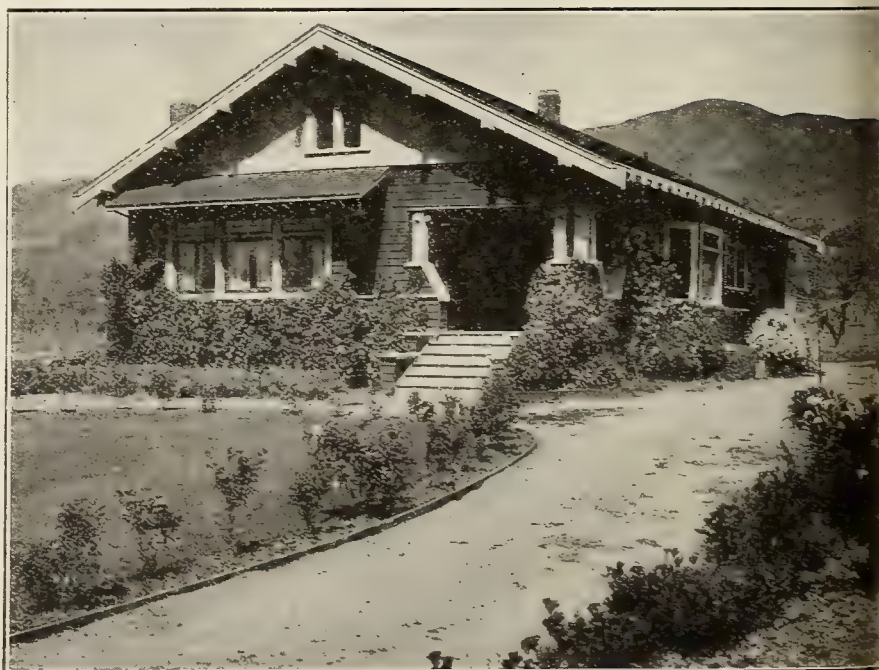
Mme. Seibert. Canary yellow with scarlet center, scarlet showing through petals at base of flowers. 5 inches across. Green foliage. Height, 7 feet.

Mrs. Wilson. Old rose, darker under petals. Inclined to pale pink between edge of petals and heart of flowers. Tongue in center dark pink. Foliage uniform green. Flowers 5 inches across. Height, 4 feet.

Petofi. Creamy white. Tiny halo of golden yellow at extreme edge of petals. Heart of delicate old rose showing through petals at base. 5 inches across. Green, beautifully shaped leaves. Height, 4 feet.

Princess Susignan. Color a rich cardinal red. Flowers of medium size. 3 feet.

CANNAS—Continued on Page 85.



CANNAS—Continued.

Robert Funche. Foliage bronze and green. Flowers light crimson with suffusion of yellow. Yellow appearing stronger at edge of petals. Spotted and $4\frac{1}{2}$ inches across. Beautiful free bloomer. Height, 6 feet.

Rosea Gigantea. 4 feet. Enormous deep carmine rose flowers. A grand bedding variety.

Rubin. Foliage green and bronze with bronze predominating at edge of leaves and on stems. Flowers clear ruby carmine and $4\frac{1}{2}$ inches across. Height, 4 feet.

Stuttgartia. Red and rich gold, inclined to be mottled; scarlet predominating in heart and underside; 5 inches across and more. Edged golden yellow. Green tall stems surmounting foliage. Height 7 feet.

Schopenhauer. A very pleasing scarlet-crimson with yellow appearing in center and on lower petals; $4\frac{1}{2}$ inches. Green foliage. Height, 5 feet.

Rossini. Rose pink with yellow tongue at heart. Delicate yellow showing through leaves at base of flowers. Dark green inclining to bronze on extreme edge of leaves. Height, 3 feet.

Princess Alma. Deep rich golden yellow. Underside inclining to rose pink and salmon tones. Golden yellow predomi-

nates at heart. These flowers are 6 inches across and the iridescent sheen and the tiny particles of pure gold dust sprinkled over the interior of the flowers combine to make this an exquisite creation.

Harry Lang. Red interior, yellow underside showing through petals and at heart. $3\frac{1}{2}$ inches across and spotted. Green foliage. Height, 3 feet.

CYCLAMEN LATIFOLIUM. Small plant; round, fleshy leaves on long stems; odd-shaped flowers of various shades. November to May

Potted.....\$0 50 to \$2 50

IRIS GERMANICA (German Iris). Hardy, early blooming; large, ornamental flowers of rich colors; early May

Clumps.....\$0 30 \$2 50

Kaempferi (Japanese Iris). The well-known Japan "Flag," many colors. Flowers sometimes measure 10 to 12 inches across.

Clumps.....\$0 35 \$3 00

Stylosa. Imported by us from Holland. This is a winter-blooming Iris. The blue and white types are very beautiful and are particularly valuable because of being in bloom when no other flowers are to be had.

Clumps.....\$0 35 \$3 00

DAHLIAS

OUR DAHLIAS WERE AWARDED FIRST PRIZE AT FRESNO COUNTY FAIR.

The Dahlia is one of the most satisfactory flowers and not being particular as to soil will often do very well under adverse conditions. They respond readily to good treatment and will produce a wealth of bloom in return. A medium light loamy soil that is well drained is most suitable. Stable or barnyard manure should be worked into the soil during the Fall and Winter months; they should also be fed some fertilizer when the plant first begins to bud. Do not water very much until the plants are in bud. This is especially true in the interior valleys in this State.

TIME OF PLANTING.

This depends on the locality in which they are grown, where frosts occur they should not be planted until danger of frost is over. In the hot interior valleys late planting is advisable, April 10th to June 1st.

LOCATION, DEPTH AND SITUATION.

Any open situation is favorable for the Dahlia. Tubers should be laid flat four to six inches from the surface (do not stand on end). The soil over sprout should be kept well cultivated.

We list below some of the best of the standard varieties of Dahlias with descriptions. Under "Dahlia Specials" we offer an assortment of different varieties. These are sorts that have been replaced by the new named varieties from time to time.

Prices except where noted, 25c each, \$2.00 for ten.

CACTUS DAHLIAS

- Countess of Lonsdale.** A rich salmon tinted with apricot.
- Doris.** An exquisite form of cactus Dahlia which was originated by us; beautiful shade of pink, petals narrow, flowers measuring four to six inches in diameter. Tubers \$1.00 each.
- Dr. G. G. Gray.** Needle pointed flowers, fiery crimson scarlet.
- Earl of Pembroke.** Bright purple plum color, large flowers.
- Edward Drury.** Delicate shade of yellow tipped with white.
- Electric.** Bright golden yellow petals tipped with pure snow white. A fine flower. Tubers 50 cents each.
- Flag of Truce.** Good size, pure white quilled pointed petals.
- F. W. Fellow.** A beautiful flower of brilliant orange, borne on long stems; blooms measuring about five inches in diameter; one of the finest of the cactus. Tubers \$1.00 each.
- Flossie Rideout.** Rich golden center, bright terra-cotta points on petals. Tubers 35 cents each.
- J. H. Jackson.** Finest black cactus. Deep velvety maroon.
- Kriemhilde.** Delicate shell pink with light center.
- Manxman.** Orange center shaded to scarlet, purple tips.
- Master Carle.** Splendid quality, deep saffron yellow.
- Mrs. H. L. Brouson.** Clear delicate salmon with long petals.
- Mrs. Wm. Marshall.** Large, soft pink with creamy white center.
- Rev. Arthur Hall.** Large florets incurved. Color ruby crimson.
- Rhein Koenig.** An excellent white cutflower; free bloomer.

Rhenisher Frohsinn. Flowers are splendid form, incurving petals, white at base which change to luminous carmine rose at half their length, forming a most attractive flower. Tubers 75 cents each.

Ruby Grinstead. Center suffused into rich shade rose fawn.

Stella. Rich vivid scarlet, free bloomer.

Thuringea. Very fine orange red, twisted petals; good stems, prolific bloomer. Tubers 35 cents each.

DECORATIVE DAHLIAS

American Beauty. Same shade as American Beauty Rose.

Bessie Boston. Cherry red, very compact in form.

Choice. Salmon pink and yellow shades; strong grower. Good stems. Tubers 50 cents each.

Delice. Beautiful soft pink, very prolific, having good stems and an excellent flower to cut. Tubers 35 cents each.

Geo. Walters. Large, salmon pink and yellow; fine variety. Tubers \$1.50 each.

Golden West. Exquisite flowers of golden yellow, borne on good stems; very fine. Tubers \$1.00 each.

Jack Rose. Identical shade of celebrated Gen'l. Jack Rose.

Le Grande Manitou. One of the best decorative Dahlias in existence; pure white artistically striped, splashed and blotched with deep violet purple, sometimes bears solid purple colored flowers. Tubers 35 cents each.

DAHLIAS—Continued on Page 86.

DAHLIAS—Continued.

Madam A. Lumiere. Very attractive, pure white with violet red tips.

Madam Van Den Daele. Large white, deeply edged with silvery pink.

Maryan. Color beautiful shades of orange, buff and apricot. A perfect Dahlia, having stems of unusual length with blooms eight to ten inches in diameter. Tubers \$1.50 each.

Minnie Burgle. Intense scarlet of good size and keeping quality; one of the best reds ever introduced. Tubers 35 cents each.

Reggie. Large, beautiful cherry red.

Souvenir Gustav de Doazon. Pleasing shade of orange red; flowers eight to ten inches in diameter.

PEONY FLOWERED

Baron G. de Grancy. New fragrant peony flowered Dahlia. Flowers borne on long graceful stems; pure glistening white. Tubers 35 cents each.

Copper. Copper colored shaded and tipped with bronze and apricot. Broad fluffy petals twisted and often incurved, flowers six to eight inches in diameter in great profusion. One of the finest. Tubers \$1.50 each.

Germania. Bright glowing crimson. Free bloomer.

Glory of Baarn. New fragrant peony flowered Dahlia. Delightful clear soft pink, with golden yellow centers. Tubers 35 cents each.

La Rainte. New fragrant peony flowered novelty. Charming deep lavender pink with exquisite golden yellow center.

Laverne. A pleasing shade of lemon yellow, often measuring ten inches in diameter. An excellent variety. Tubers \$1.00 each.

Pacific Grove. Flaming scarlet with bright fluffy petals of silky texture, borne on long graceful stems. Excellent for decorative purposes. Tubers 75 cents each.

Queen Emma. Fragrant Peony flowered Dahlia. Appears almost artificial. Charming shade of pink, inner petals banded with gold. Tubers 35 cents each.

Santa Barbara. Soft satiny pink shaded with yellow. A fine variety. Tubers \$1.00 each.

Sweet Remembrance. A very bright soft pink, one of the finest of its color. The beauty of the bloom is enhanced by the slightly darkened foliage. Tubers \$1.00 each.

POMPON DAHLIAS

Fascination. Pink and lavender, blotched with white.

Prince Charming. Cream, very heavily tipped with purple; one of the best.

Raphael. Very dark maroon, extra fine form.

SHOW DAHLIAS

A. D. Livoni. A beautiful shell pink. Very prolific, excellent cutflower.

Clara Seaton. Said to be the finest show Dahlia in existence; color rich golden bronze with wonderfully quilled petals; very large with large strong stems. Tubers \$1.00 each.

Cloth of Gold. Golden yellow shaded with brick red; free bloomer, fine for hedges.

Gladiator. Clear violet, shaded blue; long stems. Tubers 35 cents each.

Grand Duke Alexis. Glistening white, tinged with lavender rose and beautifully quilled.

Mephisto. Dark maroon, flowers very prolific.

Stradella. Deep purple crimson.

SINGLE DAHLIAS

Rose Pink Century. Rosy pink shades; flowers borne on long graceful stems.

Twentieth Century. Pure white at base and tip of petals, center of petals delicate blush rose; five to seven inches in diameter.

DAHLIA SPECIALS

Six assorted standard sorts, our selection..... \$1 00
Twelve assorted standard sorts, our selection..... 1 75



First Prize Collection Class A, San Francisco Dahlia Show, Fall, 1917. Dahlias are Easily Grown and May be Enjoyed by All Flower Lovers.

ROSES



Bessie Brown
(See page 91)

ROEDING'S CALIFORNIA ROSES

Among all the flowering shrubs that grace the garden or add to the beauty of hall or conservatory, none can compare with the rose. Of diverse color and character of foliage, of endless design and color of bloom, it lends itself to a wider range of decoration than any other single group of plants, being equally desirable as pot plants, for garden culture and for cut flowers. When to these qualifications are added ease of culture and quick and ample responses in flowers, it is explained why the rose has been aptly termed "The Queen of Flowers." In our collection of flowering and ornamental shrubs, it occupies first place.

Budded Roses

Budded roses grow far more vigorously than those on their own root and are longer lived; so that the slight additional expense incurred to begin with, is more than compensated in having superior plants. The only possible objection—claimed by some—is that the plants are apt to sucker. We avoid this by dis-budding the stock, making this possibility nil. As a further preventative we recommend that our customers plant the junction of the bud with the stock two or three inches under ground. If planters will observe to do this, the plants will make a better root system, and all possible difficulty of suckering will be removed.

THE RIGHT BEGINNING

It is impossible to grow a rose garden of fine large thrifty bushes with an abundance of blooms by starting with small plants, which have been previously started or grown under glass, or weak imported plants. To have satisfactory success you must have fine thrifty field grown plants to start with. Do not form the opinion that California field grown roses are tenderer than plants grown in cold climates, as this opinion is a decided mistake. Nowhere in the world can better rose plants be grown than in the coast counties of California. Being thoroughly hardy and vigorous, with well-ripened wood and a well-branched root system, these plants are planted everywhere with equal success with plants grown under the most favorable conditions in the colder climates, and experiments have shown that in many cases with far better results.

SITUATION

The ideal situation is high ground, well sheltered from the prevailing wind. Along the coast it is not best to plant roses where they will be shaded by large trees or hedges. In the warmer interior valleys of California and in similar climates this condition is not objectionable, but instead is favorable, provided the shade is not too dense, permitting the plant to receive the sunshine a portion of the day.

SOIL

A good heavy loam soil is best for roses. Gravel soil is far from being ideal for roses, but it is better than very sandy soil. (In a poor heavy clay or rocky soil, it will pay to dig the hole extra large and two feet deep. Wheel the dirt away entirely. Fill the hole with six to twelve inches of well-rotted manure at the bottom and good rich soil to the top). The ground should be spaded thoroughly and if any well-rotted manure is available, it should be worked well into the soil. Under no circumstances use fresh or new manure. It is best to prepare the ground some time before planting if it is possible to do so.

PLANTING DISTANCES

This depends upon the type of rose. Plant the strong Hybrid Perpetual Roses three feet apart. Hybrid Teas and Teas about two and one-half feet. The Polyantha type are more dwarf in their habits and permit of being more closely planted.

PLANTING

The best season of the year for planting roses on the Pacific Coast and in the southern states is from January 1st to March 15th, with the recommendation in favor of early planting. In the northern states planting should be done during October and November in the Fall, and March and April in the Spring, but should be ordered some time in advance.

When plants are received, unwrap them with the greatest care; do not allow the roots to be exposed to the sun or drying winds. If for any reason the roots are dry, soak in water for a few hours and then bury in the earth for a few days. If the stems are also dry, bury the whole plant in moist earth for three or four days, and they will again show life and vigor. Too much stress cannot be given to the importance of properly trimming the rose at planting time. Prune the top, cutting back the branches at least two-thirds. Thin out, leaving not more than three branches to form the head. (See illustration on page 88.) The roots should also be cut back one-half and all bruised roots removed. In planting, the same care should be observed as with any tree or plant. Dig a hole large enough to receive the roots and dip them in thin mud before planting. When planting, point the roots down, slanting to the side of the hole. Press the soil firmly around the roots or settle around the plant by watering freely.

Do not forget these points, but follow this advice if you want good strong plants.

PRUNING

No definite rule can be laid down for pruning roses except that Teas and their allied families do not require as severe pruning as the Hybrid Perpetuals and others of equally vigorous growth. There is one fast rule, however, and that is never to allow roses to go unpruned. The best time is from December 15th to March 1st. The first winter after planting, thin to three main shoots and cut these back at least two-thirds. In after years with the frame-work branches established, the laterals should be thinned out to prevent overcrowding and those allowed to remain should be cut to spurs of about four buds each. If this method is followed regularly each season, a properly pruned plant will have the shape of a deer's antlers. With climbers the framework branches should be trained up against the wall in the shape of a fan, not leaving more than three or four, and these should be cut back severely the first two seasons to promote vigor and sturdiness of growth. In after years shorten in the laterals and thin out sufficiently to prevent overcrowding, otherwise the plant will be a mass of dead wood and twisted branches, and its vigor will become seriously impaired. If you fail to prune and thin out you will have an over-abundance of small flowers.

When the roses have stopped blooming in the early summer the faded buds should be cut and the plants given a light pruning, or more correctly, a pinching back, which will have the effect of making them respond with a bounteous bloom in the Summer and Fall.

FERTILIZING

Roses are often found blooming under adverse conditions and with little care, but perhaps no plant responds more quickly to "feeding" than the rose. Manure from the cow barn is the best fertilizer you can use. Other manures may be used with good results when the former cannot be conveniently obtained, but **never** let any **green** or **fresh** manure come in direct contact with the roots. Use it only as a top-dressing. Roses need fertilizer most when blooming. When the flower buds begin to swell an application of liquid manure will give immediate and pleasing results.

Poultry droppings, slacked lime or a handful of ground bone thrown on the ground around the plants, letting the rain take it into the soil, is effective.

Do not become over-enthusiastic during the first year, in your efforts to force bloom by giving your plants too much fertilizer. Many plants are killed by manuring them too freely the first season after planting.

WINTER PROTECTION

In the mild climate of the Pacific Coast and extreme south no protection is needed for even the tenderest Teas and Hybrid Tea sorts. In colder climates for tender sorts, we advise mounding up the dirt around the base of the bush about six or eight inches, but do not do this until after heavy frosts or first freezing weather. In addition a fork full of straw manure should be forked well into the branches. To make this easier, trim the canes back to within fifteen inches of the ground.

Also a good bunch of leaves or straw on the ground around the bushes weighted down to prevent blowing away will help to prevent injury when weather gets very cold.

VARIETIES

No attempt is made to list all the known varieties. By observation and testing we select and list only such varieties as have merit and are the best of the class, taking into consideration color, habit and other desirable points.



A Rose Bush as Taken from the Nursery.

Plant to Right Thinned and with Main Branches Shortened to 8 Inches. To Make You Proud of Your Garden Prune Like This. Set Plants so that the Soil will Come Flush with the Branches at the Point where they Diverge. It is Important that Budded Roses have the Bud at Least Two to Three Inches Below the Surface of the Ground.

It has been our purpose to do this in a thorough manner, and we offer a list from which may be selected all the colors and shades; the most fragrant; the best bloomers; and the hardiest, strongest growers, to completely plant the garden of the amateur, or the expert.

CLASSES

Hybrid Perpetual. The American Beauty is a good example of this class. Flowers are large and durable with strong fragrance. Stems are usually long and unbranched.

Hybrid Tea. Originated from crossing the Tea with the Hybrid Perpetual class, retaining the fragrance of the Hybrids and the profuse blooming qualities of the Teas. Much harder than the Teas.



The Nurseries—Santa Clara Valley—The Growing Grounds of California Field-Grown Budded Roses.



A Well Pruned Rose Bush with its Branches Properly Distributed to Promote not only a Vigorous Development, but Profusion of Flowers During the Season.

Noisette (Champney). All climbers. Colors, yellow and white; none red or pink. All are strong rapid growing varieties of which the Marechal Niel is an ideal type.

Polyantha. Flowers small and appear in large clusters. All of the climbers, with the exception of Climbing Mlle. Cecile Brunner, bloom only in the Spring.

Teas. Perfectly at home in California; need protection in other states during winter. Very dainty, beautiful tea-scented flowers; with glossy foliage the rule.

In addition to these we list a few of other classes. Abbreviations opposite each variety in the following list indicate the class to which it belongs.

Ban., Banksia; Ben., Bengal; Bour., Bourbon.

H. B., Hybrid Briar; H. N., Hybrid Noisette.

H. P., Hybrid Perpetual; H. T., Hybrid Tea.

Misc., Miscellaneous; M., Moss; N., Noisette.

Poly., Polyantha; Pr., Prairie; Rug., Rugosa.

T., Tea; Wich., Wichuriana; H. W., Hybrid Wichuriana.

Five plants of one or five varieties sold at the ten rate — fifty at the one hundred rate where these rates are given.

Starred varieties are climbers.

Tree Roses

Tree Roses, known also as Standard Roses, are very imposing when planted among Shrubbery and occupy very little ground space.

These Tree Roses are produced by budding on a tall stem about three feet from the ground; the variety desired. We select the most vigorous and hardiest sorts, keeping in view the selection of best colors and most constant bloomers.

This careful selection on our part is making the standard rose more popular every year, and to meet this ever increasing demand, we are growing large blocks of standard roses, while several years ago we grew only a few. A well-grown trained standard rose tree is a beauty to behold, and several planted together, or grouped, are very attractive. There are many places on nearly all grounds, even on city lots, where standard roses may be planted with splendid effect.

Proper pruning of the standard rose is very essential. Shorten in the head and thin out the plant, causing it to become symmetrical, and it will respond with a wealth of bloom which is surprising. The first two seasons wrap the stem with paper or burlap to prevent sunburn, and cut away all suckers appearing below the crown.

Descriptions may be found under Bush Roses on following pages.

	EACH	10
Price (Dormant).....	\$1.50	\$12.50

Bride
Bridesmaid
Cecile Brunner
Duchess de Brabant
Frau Karl Druschki
Gen. McArthur
Gruss An Teplitz
K. A. Victoria
Lady Ashtown
Lady Hillingdon
La France

Liberty
Mad. C. Testout
Niles Cochet
Papa Gontier
Perle des Jardins
Pink Killarney
Reve de Or
Rhea Reid
Sunburst
Sunset
W. A. Richardson

Newest in Roses

A selection of the very best among roses of recent introduction is indeed a difficult task since there is so much to take into consideration before it can be said that a new rose is superior to some proven and tested well known sort.

The following new sorts have been propagated by us only after the closest observation and thorough testing. We feel perfectly warranted in recommending these superb new sorts to our many customers.

	EACH	10
Price.....	\$1 00	\$7 50

Madam Edouard Herriott (Pernetiana). A very strong grower; flowers a unique blending of shrimp pink, copper, orange and apricot.

Mrs. Chas. Russell (H. T.). Called the Pink American Beauty. Blooms on long stiff stems. Grand rosy pink blooms of full form and fully as large as the "Beauty."

Ophelia (H. T.). Strong grower. Flowers on long stiff stems and are produced in the largest profusion; very lasting when cut. A magnificent rose.

Queen Mary (H. T.). Deep canary yellow; petals crayoned with pure deep carmine; a charming color combination.

Radiance (H. T.). Very free flowering habit; a very strong grower. Blooms constantly and is very fragrant.

Willowmere (Pernetiana). A very vigorous grower, of erect habit and few thorns; buds long; flowers large, shrimp pink, turning to yellow in center, edges carmine pink.

	EACH	10
Following new sorts.....	\$0 75	\$6 00

Chas. J. Grahame (H. T.). Vigorous grower; dazzling orange crimson, with unique shades.

Chateau de Clos Vougeot (H. T.). The color is varied from a deep velvety scarlet shaded to bright red and then to dark velvety crimson, as the flowers expand. Its fragrance is very pronounced.

Edward Mawley (H. T.). One of the best of the new roses; flowers large, dark velvety crimson, almost continuously in bloom.

Erna Teschendorff (Dwarf Poly.). The color is a brilliant carmine red. It is a very free bloomer and it has a permanency of color which has always been lacking in other roses of this family.

Excelsa (H. Wich.). Flowers double, bright scarlet, produced in clusters; a fine novelty.

Farben Konigin (H. T.). The color is a carmine rose, inclined to somewhat deeper color on the outside of the petals; flowers very large and full.

Geo. Arends (H. P.). Called by the originator "Red Frau Karl Druschki." Flowers bright red carmine, borne on long stems; an extra good forcing rose.

Heinrich Munch (H. P.). It has every characteristic of the Druschki with the exception that the plants are somewhat stronger growers and the flowers are more striking, both in bud form and when fully open. The petals are beautifully reflexed. Pink.

Helvetia (H. T.). Fine cut flower rose; inside of petals bright pink, outside fiery red; very free bloomer.

Hiawatha (H. Wich.). Flowers rich crimson with white center.

Juliet (Hybrid Briar). A distinct type of rose. It is a wonderful grower, sending up long, strong stems surmounted by flowers of most unique color; the outside of the petals is old gold; the interior, rich rosy red, changing to deep rose as the flowers expand; very large and full; delicious fragrance.

Killarney Brilliant (H. T.). Growth strong as its parent (Pink Killarney) and equally as free bloomer. Color most brilliant pink. Hardy.

Konigin Carola (H. T.). Satiny rose with reverse of petals silvery rose. Very free flowering. Even more so than its parent.

Lady Pierre (H. T.). Awarded a medal by the National Rose Society. Reddish salmon; petals apricot inside.

Laurent Carle (H. T.). Brilliant velvety carmine; flowers very large, of perfect form, not too full, always opening freely.

Lieutenant Chaure (H. T.). Vigorous grower; long buds borne on long stems. Velvety crimson, shaded garnet.

Madam Jule Grolez (H. T.). A rose of highest quality. Color a beautiful satiny china rose; flowers of large size; very double; of good form and very free flowering. Deserves to be planted extensively.

Mrs. W. Christie Miller (H. T.). An excellent bedding rose of the strongest vigorous habit. Blooms very large; soft pearly blush color, shaded. Flowers remain on bush for a long time.

Prince E. C. d'Arenberg (H. T.). A grand red rose of vigorous growth. Clear bright red; perfectly formed.



Dean Hole—Classified as the Almost Perfect Rose by Experts. (See Page 92).

Rayon D'Or (H. T.). A vigorous grower, of fine branching habit, with fine bronzy green foliage and oval-shaped buds; tinged coppery orange. It is not only very attractive in this form, but equally so when the flowers are expanded, on account of its fine substance and magnificent golden yellow coloring.

Sunburst (H. T.). Few roses have so many favorable points all combined in one plant. Its bronzy foliage; absence of thorns; its long, pointed, orange-yellow buds, becoming deeper towards the center, carried on long, stiff stems, place it in the front rank among the new roses.

White Dorothy Perkins (H. Wich.). A sport from Dorothy Perkins; of the same habit as its parent; flowers pure white.

Verna MacKay (H. T.). Vigorous grower and free bloomer. Flowers on erect stems. Ivory-buff, changing to bright lemon-yellow.

Late Introductions

- | | EACH | 10 | 100 |
|--|--------|--------|---------|
| Price..... | \$0 50 | \$4 00 | \$35 00 |
| Austrian Copper (H. B.). One of the most beautiful of the Brier Roses. Gorgeous bright reddish-copper; single. | | | |
| Beaute de Lyon (Misc.). Flowers coral-red, slightly shaded with yellow; large and full. | | | |
| Caroline Goodrich (H. P.). Light red with rich fragrance. | | | |
| Climbing White Cochet (T.). Identical with White Maman Cochet except that it is a climber; flowers white, sometimes suffused with pink. | | | |
| Duchess of Wellington (H. T.). Intense saffron yellow, stained with crimson, changing to deep coppery saffron yellow. | | | |
| Florence Edith Coulthwaite (H. T.). Deep cream, suffused with bright rose; petals reflexed and back delicate orange. | | | |
| George Dickson (H. T.). Deep scarlet shaded velvety Crimson. Large, very full with large petals, very vigorous grower. Rich fragrance. | | | |
| Harry Kirk (H. T.). Color deep sulphur-yellow with a lighter shade on the edges of petals. Flowers large, perfect form, buds long. | | | |
| His Majesty (H. T.). Dark crimson, shaded deep vermilion edge of petals. | | | |
| Jonkheer J. L. Mock (H. T.). This stands out as a leader. It is fine in bud, being full and well formed, and is equally good when it opens up. In color, it is a mixture of bright red and salmon pink. As a grower, it is among the best. | | | |
| Kronprinzessin Cecilie (H. T.). Silvery pink, exquisite form. | | | |
| Lady Ashtown (H. T.). Very free bloomer and keeps a splendid color; pale rose shading to yellow at base of petals, reflex of petals silvery pink; buds long and pointed; flowers large and full. | | | |
| Lady Hillingdon (T.). A grand rose for either pot work or garden decoration. Blooms continuously, buds very long, with a most pleasing shade of orange yellow. Particularly fine in the bud state. | | | |
| Lady Ursula (H. T.). The flowers are large and of a perfect form; delicately scented, and of beautiful pink color. | | | |
| Marquis de Querhoent (T.). A beautiful China rose. Copper salmon and golden yellow. | | | |
| Marquise de Sinety (H. T.). This rose inspires enthusiasm as soon as it is seen. It is clear yellow, fading to pale rose at edge of petals, large, full and cup-shaped; very fragrant. | | | |
| Mary Countess of Lichester (H. T.). Crimson carmine, delicately scented. | | | |
| Melody (H. T.). Saffron yellow with pale yellow edges. Flowers usually very large. Double but always opening freely into a lovely flower. Fragrance is exceedingly rich. Plants grow vigorously; dark foliage, free from mildew at all stages. A perfect rose and free bloomer. | | | |
| Mildred Grant (H. T.). Color is pearly white, petals edged pink. Blooms size of Paul Neyron. One of the best of the late introductions. | | | |
| Mrs. Aaron Ward (H. T.). Long buds borne on erect stems. Flowers large; Indian yellow, suffused with salmon rose. | | | |
| Mrs. E. J. Holland (H. T.). Deep salmon rose, shaded light at edge of petals. | | | |
| Mrs. Wm. H. Cutbush (Poly.). Baby Rambler habit with pale pink flowers of Dorothy Perkins; blooms in profusion summer and autumn. | | | |
| Nita Weldon (H. T.). Ivory white with faint blush on edge of petals. | | | |
| Pharisaer (H. T.). Silvery pink, suffused salmon. Open flowers with pointed center. | | | |
| Rhea Reid (H. T.). Color varying from rose-cerise to rich crimson-red. Large, full flowers; fine for forcing. | | | |
| The Lyon (H. T.). Salmon pink, shading into chrome yellow. | | | |
| Walter Speed (H. T.). A vigorous, erect grower, of a deep lemon-yellow color, becoming white as it develops. | | | |
| William Shean (H. T.). Purest deep pink, with shell-shaped petals forming extra long buds. | | | |

General Collections.

- | | EACH | 10 | 100 |
|--|--------|--------|---------|
| Price..... | \$0 35 | \$3 00 | \$25 00 |
| Abel Carriere (H. P.). Purple crimson, fiery red center; very double and fine. Flowers freely especially in early summer, large and full. Very attractive. | | | |
| Agrippina (Ben.). Fine, rich crimson; moderately double; fine in bud; a valuable bedding variety; is not affected by the heat, and blooms profusely during the entire summer; as a hedge rose it cannot be surpassed. | | | |
| Alice Leroy (M.). Rich glossy pink; very sweet. | | | |

American Beauty (H. P.). Color rosy crimson, exquisitely shaded and very handsome; extra large full flowers, exceedingly sweet; makes magnificent buds; is a constant bloomer and a grand forcing rose.

Augustine Guinoisseau or White La France (H. T.). A beautiful rose same form as La France, but pearly white, tinted with fawn.

Baby Rambler, "Mme. Norbert Levavasseur" (Poly.). Dwarf, bright crimson. A cross between Crimson Rambler and one of the Polyantha sorts, but instead of climbing it forms a dark, compact bush, not over 11 inches high, loaded down with heavy clusters of bright crimson flowers similar to Crimson Rambler. It blooms from early spring until late in the fall; one of the most popular varieties for bedding.

***Banksia, Double White (Ban.).** Pure white. Small, violet scented. Blooms constantly during spring. Branches long and thornless.

***Banksia, Yellow (Ban.).** Clear yellow. Flowers large, but not so fragrant as White Banksia. A wonderful climber.

Baroness Rothschild (H. P.). Pale bright rose, shaded white; very large and finely formed; flowers borne on erect thick canes, and are closely set in the foliage; very handsome and attractive; one of the best of the Hybrid Perpetuals.

***Beauty of Glazenwood (Misc.).** San Rafael rose. A vigorous fast climber sending forth a mass of bloom in the early spring, being a combination of copper, carmine and salmon yellow. When in full bloom, it is a sight not soon forgotten. Entirely distinct from Gold of Ophir.

Belle Siebrecht (H. T.). A superb rose; the buds are beautifully formed, of long tapering shape and when half blown the petals reflex in a graceful manner; the flowers have great substance and the petals are of heavy texture; color imperial pink.

Bessie Brown (H. T.). Creamy white; the blooms are of immense size and substance; petals very smooth and shell-shaped; highly perfumed. A fine exhibition rose.

Betty (H. T.). Introduced by Messrs. Dickson & Sons, Belfast, Ireland. It stands in the same class as the Belle Siebrecht and Killarney, with the exception that it is a more robust grower, and is truly of a unique color, being of a ruddy gold, overspread with golden yellow. It is deliciously perfumed, extremely large and of glorious form, and blooms continuously from early spring till late in the fall.

Black Prince (H. P.). Deep, dark crimson, richly shaded; very globular and good.

Bridesmaid (T.). A sport from Catherine Mermet. This new variety has all the good qualities of its parent, but is of a deeper shade of clear bright pink and is a more constant bloomer.

Capt. Christy (H. P.). Deep flesh. A lovely rose, blooming almost the entire season; very large double buds of deep flesh color; strong grower, with grand foliage; very beautiful and valuable.

Catherine Mermet (T.). Light flesh-colored; large, full and globular; one of the finest Teas; when the flowers are fully expanded they yield a delightful perfume.

***Cherokee, Single (Misc.).** A beautiful pure white rose, large, clear white, single flowers, full of bright yellow stamens, giving it a most unique appearance; foliage dark rich green. A grand climber.

***Cherokee, Double (Misc.).** Flowers double; pure white. Rampant climber.

***Cheshunt Hybrid (H. T.).** Cherry carmine; large, full open flowers, an excellent climbing or pillar rose.

Clara Watson (H. T.). A vigorous grower sending up strong canes clothed with heavy foliage; pearly white, center tinted pale peach; large well-formed blooms; a free and continuous bloomer.

***Climbing Belle Siebrecht (H. T.).** Imperial pink. Surpasses the bush variety of same name, flowers are fuller and larger. A very beautiful climbing variety.

***Climbing Bridesmaid (T.).** Bright pink. Identical with its well-known, popular and unrivaled parent, the Bridesmaid, with the exception that it is a thrifty climber; in every respect a grand rose.

***Climbing Capt. Christy (H. P.).** Deep flesh. Of climbing habit, flowers same as Captain Christy; a very profuse bloomer; one of the best roses.

***Climbing Caroline Testout (H. T.).** This most wonderful rose is identical with that most beautiful and very free flowering rose, Madam Caroline Testout, except that it is a very vigorous climber, canes making a growth of 12 feet in a season and an inch through. No garden should be without this magnificent rose.

***Climbing Devoniensis (T.).** Creamy white, center sometimes tinted with blush; very large, nearly full; delightfully scented.

***Climbing Kaiserin Augusta Victoria (H. T.).** One of the very best climbing white roses; a strong and rapid grower, making shoots fifteen feet in a season; flowers superb, of good texture and substance, extra large, deep and full, very double, and are produced on long stiff stems; buds long and pointed; deliciously fragrant.

***Climbing La France (H. T.).** A sport from the La France, resembling it in every particular. A strong rapid grower, producing large delicate, silvery-pink flowers in great abundance.

***Climbing Mlle. Cecile Brunner (Poly.).** An exact counterpart of the great favorite bush rose of the same name, except that it is a very much stronger grower. Flowers perfectly, double, rosy pink, petals in bud daintily reflexed. Delightfully fragrant and in every respect a most exquisite rose. A vigorous climber.

***Climbing Meteor (H. T.).** Deep crimson. Climbing Meteor is the acme of all red climbing roses. It is a free persistent bloomer and will make a growth of from ten to fifteen feet in a season. At the head of the list of all roses for summer blooming, loaded with deep, rich red flowers all the time.

***Climbing Niphotos (T.).** Pure white. A sport of the Niphotos; flowers identical; a very vigorous climbing plant; a much stronger grower than its parent.

***Climbing Papa Gontier (T.).** A vigorous grower with beautifully formed buds. The bush form of this very popular rose is very well known; this new rose possesses all its merits, flowers of exquisite substance, color rosy crimson, beautifully formed buds, and with it all a wonderfully vigorous grower and climber.

***Climbing Perle des Jardins (T.).** Same as the Perle des Jardins, except in growth, it being a very vigorous climber.



Rosalind Or.
See page 94)



***Pink Cherokee.**
(See Page 94)



Frau Karl Druschki.



The Lyon.
(See Page 90)

***Climbing Wooton (H. T.).** Velvety red. A sport from the famous rose, Souvenir de Wooton, and identical with it, except that it is a strong, rampant climber, producing in wonderful profusion, superbly formed flowers, with thick leathery petals, which are deliciously scented; as a climbing rose it will rank among the best.

Clio (H. P.). Flowers flesh color, shaded pink; large; fine form. Very vigorous. A very choice variety.

***Cloth of Gold (N.).** Deep yellow center, edges sulphur, very sweet scented; a magnificent variety. A grand climber. An old standard variety which has never lost its popularity.

***Crimson Rambler (Poly.).** Bright crimson. From Japan. The flowers are produced in great pyramidal panicles or trusses, each carrying from 30 to 40 blooms, the individual flowers measuring about one to one and a half inches in diameter and remaining perfect on the plant upwards of two weeks with the freshness of color unimpaired; a remarkably vigorous grower and climber, making shoots from 10 to 15 feet in a season.

Dean Hole (T.). Silvery carmine, with salmon shadings. The flowers are large, of great substance and perfect in form, both as a bud and when fully expanded. A wonderful rose.

Docteur Grill (T.). Clear buff-pink, passing to a clear fawn, elegantly suffused with pale canary yellow. A profuse bloomer.

Dr. William Gordon (H. P.). This is a beautiful rose, an exquisite shade of pink, petals edged with white and prettily imbricated; the flowers are large and well-formed. An unusually strong grower. It combines so many desirable qualities that it deserves a prominent place among the new roses.

***Dorothy Perkins (Wich.).** Clear shell-pink flowers profusely borne in numerous clusters full and double, with crinkled petals. Leaves bright green and very persistent. A grand rose for training or for ground work.

Duchesse de Brabant (T.). Brilliant rosy pink; globular; standard Tea; in every way a charming rose.

Duchess of Albany or Red La France (H. T.). Deep pink. A sport from the La France. Resembles that variety, but the bud is more perfect in contour and the color is of a richer, deeper, more even pink tint; one of the most important for forcing or growing in the open air.

Eliza Sauvage (T.). Very large, double, globular flowers; color pale yellow to white, with orange center.

Empereur du Maroc (H. P.). One of the most perfect of the dark roses; color rich velvety maroon, intensely dark.

Etoile de France (H. T.). Received a gold medal in France and the introducer, J. Pernet Ducher, the originator of so many grand roses claims that it is one of the finest roses ever sent out. The flowers are very large and borne on good long, stiff stems; color a lovely shade of clear, red-crimson velvet; very fragrant and keeps well. A superb rose and sure to be a great favorite.

Etoile de Lyon (T.). This is considered one of the finest yellow bedding roses for outside planting; one of the hardest in the Tea section; blooms freely, and every flower is a gem; equals Marechal Niel in size, on strong bushes; color a deep chrome yellow; a remarkable rose, deserving extensive culture.

Etoile d'Or (Poly.). Double flowers borne in large clusters; canary yellow, rich citron-red center. A profuse bloomer.

Florence Pemberton (H. T.). Creamy-white, suffused pink, the edges of the petals occasionally flushed peach; flowers large, full, perfect in form, with high pointed center. A magnificent rose. Has been awarded many medals.

***Flower of Fairfield (Poly.).** A perpetual blooming Crimson Rambler.

Francisca Kruger (T.). An exquisite rose, blooming very freely in the autumn; buds and flowers of excellent form; coppery yellow, shaded with peach. A fine acquisition.

Franz Deegan (H. T.). Deep orange-yellow. A magnificent rose and will certainly prove worthy of extensive cultivation. A seedling of Kaiserin Augusta Victoria; it retains its fine form, but is a deep orange-yellow color, merging to creamy white in the outer petals. A most vigorous grower.

Frau Karl Druschki or Snow Queen (H. P.). Of all the roses of recent introduction none have created the sensation that this one has. It is of German origin and a remarkably vigorous grower. Its flowers are very large, perfect in form, of the purest snow-white color, with large shell-shaped petals. A very free bloomer. It must be seen to be appreciated.

Gen. Jacqueminot (H. P.). Bright shining crimson, very rich and velvety, exceedingly brilliant and handsome; makes magnificent buds; one of the best for open ground and for forcing.

General McArthur (H. T.). Probably the greatest favorite of all crimson roses. Highly perfumed, free-flowering, large, hardy, unexcelled as a splendid all-around garden variety.

Geo. C. Waud (H. T.). Glowing orange-vermilion. Flowers large, full and perfectly formed, with high, pointed center. Stems long, carrying flowers erect. Fragrant. A very fine variety.

***Gloire de Dijon (T.).** Buff, orange center, large and double; sweet scented, early flowering and the hardiest of any of the Tea roses; a popular variety. A good strong climber.

***Gold of Ophir (N.).** Apricot-yellow. A medium-sized rose, blooming in clusters; of a very singular color, entirely different from any other rose known, being a bright coppery red, petals edged yellow. A vigorous climber.

Grace Molyneux (H. T.). Creamy apricot with center flesh. Large finely formed, fragrant and free blooming.

Greville or Seven Sisters (Pr.). Flowers in large clusters; varies in color from white to crimson. A strong climber.

Gruss an Teplitz (Bour.). A rose that every florist should have, inasmuch as it is easy to propagate and a color that is always in demand. When first opened it is a rich dark crimson quickly changing to a velvety, fiery red. A strong grower, blooms continuously, flowers good size and delightfully fragrant.

Helen Gould (H. P.). Not only ourselves, but the general public believe this rose to be one of the best ever-blooming roses ever introduced. Its color is quite attractive, being a soft intense carmine, with shades of cerise and sulferino, very much the color of American Beauty. Blooms very freely.

Honorable Ina Bingham (H. T.). Pure rose-pink. Very large, beautiful flower.

Hugh Dickson (H. P.). A vigorous grower, with handsome foliage; sending up strong, vigorous canes surmounted with blooms of a brilliant crimson, shaded scarlet; very large and of exquisite form with large smooth petals. A most beautiful rose.

Improved Rainbow (T.). It is entirely distinct and far superior to Rainbow. The Improved Rainbow is penciled with brightest Gontier color, every petal in every flower and base of petals of a bright amber color, making a very distinct and charming rose.



Lady Hillingdon.
(See Page 90)



General McArthur.
(See Page 92)



Climbing Caroline Testout.
(See Page 91)

Ivory (T.). A sport from the fine old variety, Golden Gate. Ivory embodies all the good points of its parent, size, freedom of bloom, a pure white color, which makes it an invaluable acquisition; a rather poor grower.

John Cuff (H. T.). Deep carmine-pink; yellow at base of petals. Buds long and pointed; fragrant. Flowers are very large, enormous petals, among the largest roses. Free bloomer particularly in the spring.

Jubilee (H. T.). A splendid large-flowered variety of intense coloring, fiery maroon-crimson, often almost black.

Kaiserin Augusta Victoria (H. T.). This beautiful rose has not only a royal name, but it is a royal rose as well; it is a grand white rose, blooming continuously, with large petals of best substance, showing no center when fully open; color pure ivory white; one of the finest roses for corsage wear, or any other use to which flowers can be put.

Killarney (H. T.). A vigorous grower with so many good points in its favor that it is regarded as a standard. Color flesh shaded white, suffused pale pink; the blooms are large, the buds very long and pointed; petals very large and of great substance; one of the finest for massing.

La Detroit (H. T.). Shell-pink, tinted soft rose; color pleasing; does not fade. Free bloomer and beautiful in bud and when open.

Lady Alice Stanley (H. T.). Deep coral rose, inside pale flesh.

Lady Battersea or Red Kaiserin (H. T.). Beautiful cherry crimson, permeated with an orange shade; buds long and pointed, very full and carried on long stems, beautiful for cutting; vigorous erect habit.

La France (H. T.). Silvery pink. One of the finest of roses; the color is a most lovely rose, with silvery luster; it is a constant bloomer, and very sweet-scented.

***Lamarque (N.).** Pure white, with shaded sulphur-yellow center, a magnificent climber and a most popular rose.

Liberty (H. T.). Crimson scarlet. Very free and continuous bloomer. While flowers are not as large as some they are well formed and of rich scarlet color. A good forcing rose and also suitable for the garden.

Louis Van Houtte (H. P.). Rich crimson; good globular shape; one of the best dark roses.

Mad. Abel Chatenay (H. T.). A strong grower and free bloomer, producing beautiful flowers of carmine-rose shaded with salmon.

***Mme. Alfred Carriere (N.).** One of the strongest and most vigorous growing roses; very fine in bud; color white, shaded yellow at the center. An exceedingly strong climber.

Mme. Caroline Testout (H. T.). Clear pink. One of the best Hybrid Tea roses up to date. It is clear pink and there is nothing in the rose line that can approach it in color; the flower is as large as Baroness Rothschild and as free as La France; should have a place in every collection.

Mme. G. Luizet (H. P.). Clear coral-rose, shaded lavender. A beautiful large rose, with broad shell-like petals; very double and full and delightfully perfumed; color an exquisite shade of clear coral-rose, beautifully suffused with lavender and pearl.

Mme. Jean Dupuy (T.). A superb rose; golden yellow, center rosy yellow, edges of petals bordered rose, buds long and pointed; flowers large, full and beautiful form.

Mme. Leon Pain (H. T.). Silvery salmon, center orange-yellow. Buds pointed; flowers large. Free bloomer. Excellent bush with dark glossy foliage.

Mme. Vermorel (T.). A grand rose and one of the best of its color ever introduced; color coppery yellow, center shaded red; blooms large, full and perfectly formed.

Miss Kate Moulton (H. T.). Pink, tinted silvery flesh. Excellent form, pointed center, outer petals very large and strongly reflexed.

Molly Sharman-Crawford (H. T.). Very sturdy growth; flowers pure white, blooming profusely.

Mrs. Myles Kennedy (T.). Silvery white, shaded buff, with pink center. Large, finely formed.

My Maryland (H. T.). Bright pink. Strong grower, free bloomer and fragrant.

Niles Cochet (T.). Pink, edged red. A California introduction. Remarkably free bloomer, particularly in the fall, when its color is at its best.

Niphetos (T.). Pure white; very large and full; long, pointed buds; very free flowering; purest of white roses; very attractive in the bud form.

Papa Gontier (T.). A magnificent bold flower; finely formed buds, color brilliant carmine, changing to rose and lilac; in brilliance of color fully equal to Gen. Jacqueminot; it is delightfully fragrant and is the most popular forcing rose of its color.

***Mme. Wagan (Climbing Paul Neyron) (T.).** Rosy pink. This is a magnificent climber and a very profuse bloomer; flowers very large and well formed, satiny rose, shaded flesh pink. No collection should be without it.

Mlle. Cecile Brunner (Poly.). Salmon-pink with deep salmon center, borne in clusters, very small, full and delicately scented; admirable in bud and open flower; a very profuse bloomer.

Maman Cochet (T.). Rosy pink. One of the finest roses introduced from France; a vigorous grower, with beautiful foliage; the bud is long and pointed, borne on long, stiff stems; color deep rose pink, the inner petals being a silvery rose, shaded and touched with golden yellow; a beautiful rose.

Marchioness of Londonderry (H. P.). Ivory white. One of the late introductions of the Messrs. Dickson & Sons, of Belfast, Ireland; flowers of great size, measuring five inches across. Perfectly formed and carried on stout stems; color ivory white; petals of great substance, shell-shaped and reflexed; free flowering; highly perfumed; growth vigorous and foliage very handsome.

***Marechal Niel (N.).** A beautiful deep sulphur-yellow rose; large, globular, very full and highly scented; the finest yellow rose in existence. A magnificent climber.

Marie Van Houtte (T.). Canary yellow, with border of the petals tipped with bright rose; large, full and fine form; a most charming sort and one of the best in its class.

Margaret Molyneux (H. T.). Saffron yellow, shaded bronzy carmine.

Medea (T.). A grand rose, of fine form in bud and when in full bloom; lemon-yellow, with canary-yellow center. Deserves a place in every garden.

Meteor (H. P.). A reliable everbloomer of the deepest glowing crimson; flowers very double, and petals slightly recurved; a beautiful open rose, a vigorous grower and very fine bloomer; a grand rose in this climate.

Paul Neyron (H. P.). Deep rose. The largest of all roses; very fine and showy; somewhat fragrant.

Peace (T.). A lovely rose and as free in its production of flowers as the well known rose Marie Van Houtte. In color it is a pale lemon yellow; buds very long and pointed and expanding into a large, broad-petaled flower of great substance and beauty. It promises to rank among the best of the new roses.

Perle des Jardins (T.). Bright straw, sometimes canary color. Very large, full and fragrant and most popular forcing Tea rose.

Perle von Godesburg (H. T.). A sport from Kaiserin Augusta Victoria, with all the good points of its parent; flowers deep yellow merging to cream in the outer portions of the petals. A magnificent rose, should be in every collection.

Persian Yellow (Misc.). Deepest yellow. The deepest golden yellow of all roses; **should not be pruned.**

***Philadelphia Rambler (Poly.).** It differs from Crimson Rambler in these important points; the color is deeper and more intense; the flowers are perfectly double to the center, very durable and of the finest substance; the blooms retain their freshness for a much longer period and it blooms later. It is fully as free a grower and climber and is a very resplendent bloomer.

Prince de Bulgaria (H. T.). An excellent flower with broad heavy petals. Superb rosy flesh color. Strong grower; free bloomer.

***Pink Cherokee.** A California introduction having all the qualities of the White Cherokee, possessing its vigorous growth, and beautiful glossy foliage.

Pink Soupert (Poly.). A seedling from Clothilde Soupert, which it resembles very closely except in color which is a clear bright pink. Double and very sweet.

***Prairie Queen (Pr.).** Flowers very large, and of a peculiar globular form; color a bright rosy red, changing to lighter as the flower opens; a strong, rapid climber.

Prince Camille de Rohan or La Rosier (H. P.). Very dark crimson; one of the best dark roses; unexcelled in every respect.

***Reine Marie Henriette (H. T.).** Cherry-red. Large, finely formed flowers; color a beautiful cherry-red; flowers tea-scented; a very pretty and deservedly popular climbing rose.

***Reine Olga de Wurtemberg (H. T.).** A very strong climber and one of the best for covering porches and trellises; color a rosy carmine; very pretty in the bud.

***Reve d'Or (T.).** Fawn. Very similar to Safrano, but climbing; very fine; will grow in almost any soil.

Richmond (H. T.). One of the best red roses yet produced and a perfect forcing rose. It comes to perfection with very little care. It is a constant bloomer, very fragrant with a color approaching a deep scarlet in tone. It has long pointed buds on tall straight stems, with elegant dark foliage. A superb rose in every sense of the word.

Rosalind Or (H. T.). This new pink seedling of bright pure scarlet pink, like a perfect Lawson carnation, with pointed buds and petals beautifully rolled; produced on long, slender stems, has qualities which place it in the front rank among the many new and grand roses.

Rubens (T.). White, delicately tinted with rose; beautiful in form; a capital grower; a free bloomer; an excellent rose.

Rugosa Alba (Rug.). Single, pure white flower of five petals; highly scented; elegant.

Rugosa Rubra (Rug.). Flowers single, of a most beautiful bright rosy crimson, succeeded by large berries of a rich rosy red color, which are a great addition to the ornamental character of the plant.

Safrano (T.). A magnificent rose; color deep fawn, changing to light fawn when fully opened.

Schneikopf (Poly.). An exquisite rose of snow-white color, borne on slender, graceful stems like Mlle. Cecile Brunner.

Snowflake (T.). A vigorous grower and by far the most profuse bloomer of the Tea roses; color pure white; for forcing and as a pot plant it cannot be excelled; a grand rose for floral designs.

Soleil d'Or (Misc.). A hybrid of Persian yellow. Conical shaped buds opening to large, globular flowers, varying from gold to reddish gold, shaded with nasturtium red. A very striking novelty.

Souvenir de Malmaison (Bour.). Clear flesh, edged blush, very large and double; deliciously scented and beautiful.

Souvenir de President Carnot (H. T.). New. One of the finest of garden roses; flower is of large size; of exquisite shape, with heavy, thick, shell-like petals, retaining its magnificent shape when full blown; bud long and pointed, borne on stiff, erect stems; color delicate, rosy flesh, shaded a trifle deeper at the center.

Sunset (T.). A fine novelty, a sport from Perle des Jardins which it strongly resembles, except in color, which is a remarkable shade of rich golden amber, elegantly tinged and shaded with dark ruddy copper, intensely beautiful, and resembling in color a splendid "afterglow," very fragrant.

The Bride (T.). Pure white buds and flowers large and delightfully fragrant. A sport of Catherine Mermet. Free bloomer; buds very full and double; a beautiful rose and should have a place in every collection.

The Queen (T.). A beautiful pure white sport from Souvenir d'un Ami; finely formed buds, showing the center but slightly when open; petals thick and of good substance; opens well; is very sweet and has proved to be a valuable acquisition to the list of pure white roses.

Viscountess Folkstone (H. T.). Creamy pink shading to salmon center. Blooms freely; flowers large and fragrant.

Ulrich Brunner (H. P.). Brilliant cherry red; a very effective color. Flowers fine form and finish, carried well upon the plant. Petals of great substance. A very valuable rose.

White Killarney. A sport of the well known Killarney with which it is identical except color which is creamy white.

Wellesley (H. T.). Fine shade of pink.

White Bath (M.). Large, full and very fragrant; color pure white, sometimes delicately shaded with rosy blush; elegantly mossed and very beautiful.

White Maman Cochet (T.). The flowers are of enormous size; remarkably round and full, pure, clear snowy white throughout when grown under glass; but when grown out of doors it pinks like Bride, but the pink only adds to its beauty. It is by far the finest and most reliable bedding rose yet produced. Its buds are long and pointed, with petals daintily reflexed. An exact counterpart of the famous Maman Cochet in everything except color.

***W. A. Richardson (N.).** Beautiful orange-yellow; flowers medium but very showy and distinct; very fine and floriferous. A valuable climber.

Xavier Olibo (H. P.). Violet-crimson. A magnificent rose of fine color; one of the very best; its shade of violet-crimson is not to be found in any other rose; finest of all dark red roses.

***Yellow Rambler (Poly.).** Characteristics identical with the Crimson Rambler and producing flowers in large clusters; blooms are large, full and double, very fragrant and of a decided golden-yellow color; will undoubtedly become the most popular of the Ramblers.

Yellow Maman Cochet (T.). Light yellow, edged rose. By some not regarded as good as Maman Cochet, but has larger stems and is desirable when a yellow rose is desired.



Mildred Grant
(See Page 90)

Valuable Reference Literature

Books for Horticulturists

California Fruits and How to Grow Them. Seventh edition, revised and extended. A Manual of Methods which have yielded greatest success. By Edward J. Wickson, A. M. Size of page, 6½ by 9½ inches, 513 pages, bound in cloth and fully illustrated. Postage prepaid, \$3.00 per copy.

California Vegetables, in Garden and Field. Fourth edition, revised and extended. A manual of practice with or without irrigation for semi-tropical countries. By Edward J. Wickson, A. M. Size of page, 6 by 9¼, 368 pages, well printed and strongly bound in cloth; illustrated. Postage prepaid, \$2.00.

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INDEX TO FRUIT DEPARTMENT

PAGE	PAGE	PAGE	PAGE
Almonds.....24-25	Citron.....37	Hovenia.....40	Persimmons.....39
Alligator Pear.....40	Citrus Fruits.....35-38	Jujube.....41	Pistachio.....25
Apples.....7-8	Crab Apples.....8	Lemons.....36-37	Plums.....13-14
Apricots.....17-18	Currants.....51	Limes.....36-37	Plumcots.....14
Artichokes.....51	Dewberry.....51	Loganberry.....50	Pomegranates.....40
Asparagus.....51	Elaeagnus.....40	Loquats.....41	Pomelos.....36-37
Avocados.....40	Feijoa.....40	Nectarines.....23	Prunes.....15-16
Bananas.....41	Figs.....29-32	Olives.....33-34	Quinces.....22
Blackberry.....50	Gooseberries.....51	Oranges.....36-37	Rhubarb.....51
Carob Tree.....41	Grapes.....41-46	Peaches.....19-22	Raspberry.....50
Cherimoyer.....40	Guavas.....40	Pears.....9-10	Strawberries.....47
Cherries.....11-12	Hop Roots.....51	Pecans.....26	Walnuts.....27-28
Chestnut.....25			

INDEX TO ORNAMENTAL DEPARTMENT

Abelia.....71	Angels Trumpet.....71	Azara.....71	Bird of Paradise.....62
Abies.....68	Anthericum.....82	Bald Cypress.....56	Blue Dawn Flower.....79
Abutilon.....82	Apple, Flowering.....61-62	Bamboos.....82	Books.....95
Acacia.....56-64-62	Apricot.....56	Bambusa.....82	Boston Ivy.....78
Acer.....58-61	Aralia.....62-71	Banana.....82	Bottle Brush.....76
Achania.....82	Araucaria.....65	Barberry.....62-71	Bougainvillea.....78
Achryanthus.....82	Arborvitae.....65	Basswood.....58	Boxwoods.....71-72
Aesculus.....58	Arbutus.....68-77	Bay Tree.....66	Brachychiton.....65
Agaves.....82	Areca.....80	Beech.....56	Breath of Heaven.....72
Akebia.....78	Aristolochia.....78	Beefwood.....65	Broom.....72
Albizia.....56	Arundo.....82	Begonia.....82	Broussonetia.....59
Almond, Flowering.....56	Ash.....56-58	Bellis.....83	Buddleia.....72
Alternanthera.....82	Australian Blue Bell.....79	Berberis.....62-71	Bull Bay.....69
Althea.....61	Australian Feather Palm.....81	Betula.....56-61	Bunya Bunya.....65
Amaryllis.....82	Australian Pea Vine.....78	Bignonia.....78	Burning Bush.....72
Ampelopsis.....78	Asparagus.....79-82	Big Tree, Calif.....66	Buxus.....71-72
Amygdalus.....56	Aspidistra.....82	Birch.....56-61	Cabbage Palm.....81
Angelica Tree.....62	Aucuba.....71	Bird Cherry.....56	Caladium.....84

INDEX—Continued Page 96

INDEX—(Continued).

PAGE		PAGE		PAGE		PAGE	
Calif. Big Tree.....	66	Eucalyptus.....	67-68	Lyon's Shrub.....	68	Robinia.....	58-61
Calif. Buckeye.....	58	Eugenia.....	74	Lyonothamus.....	68	Romneya.....	84
Calif. Laurel.....	66	Eulalia.....	83	Madrona.....	68	Rose of Sharon.....	61
Calif. Lilac.....	72-73	Evergreen Grape.....	79	Magnolia.....	58-69	Roses.....	87-94
Calif. Nutmeg.....	70	Evonymus.....	63-74-75-78	Mahonia.....	75	Rubber Tree.....	70
Calif. Redwood.....	66	Fabiana.....	75	Maidenhair Tree.....	58	Russelia.....	79
Calif. Fan Palm.....	81	Fagus.....	56	Mallow.....	83	Sabal.....	81
Calif. Tree Poppy.....	84	False Walnut.....	57	Mandevilla.....	79	Sage.....	84
Calla Lily.....	84	Fatsia.....	71	Maple.....	58-61	Sago Palm.....	80
Callistemon.....	76	False Slippery Elm.....	75	Maple, Flowering.....	82	Salisburya.....	58
Callitris.....	66	Ferns.....	83	Marguerite.....	83	Salvia.....	84
Camellia.....	72	Ficus.....	70	Maytenus.....	76	Salix.....	60-61
Camphor Tree.....	66	Ficus Repens.....	78	Melaleuca.....	76	Sambucus.....	62-63
Camphora.....	66	Firs.....	68	Melia Az-Umbrac.....	60	Sand Strawberry.....	83
Candewort.....	77	Flame Tree.....	65	Metrosideros.....	76	Sansevieria.....	84
Candytuft.....	83	Flax, New Zealand.....	83	Mexican Orange.....	73	Santolina.....	84
Cannas.....	84	Forsythia.....	63	Mock Orange.....	63	Schinus Molle.....	69
Caragana.....	60	Fragaria.....	83	Monkey Puzzle.....	65	Screw Pine.....	82
Carnations.....	83	Fraxinus.....	56	Mountain Ash.....	58	Seaforthia.....	81
Carpenteria.....	72	Fremontia.....	75	Morus.....	59-61	Sequoia Sempervirens.....	66
Carrisa.....	77	Fringe Tree.....	57	Muehlenbeckia.....	79	Sequoia Gigantea.....	66
Cassia.....	72	Fuchsia.....	83	Mulberry.....	59-61	Service Tree.....	60
Casuarina.....	65	Garrya.....	75	Musa Ensete.....	82	Shasta Daisy.....	84
Catalpa.....	56-57	Geraniums.....	83-84	Multijila Poppy.....	84	She Oak.....	65
Ceanothus.....	72-73	Gerbera.....	83	Myoporum.....	76	Siberian Pea Tree.....	60
Cedrus.....	66-68	Gingko.....	58	Myrtle.....	76	Silk Tassel Bush.....	75
Cedar.....	66-68	Gleditschia.....	57	Myrtus.....	76	Silk Vine.....	79
Celtis.....	57	Gold Flower.....	75	Nandina.....	76	Silk Oak.....	70
Century Plant.....	82	Golden Bell.....	63	Nettle Tree.....	57	Smilax.....	79
Cephalotaxus.....	66	Golden Dew Drop.....	74	Nerium.....	76	Smoke Tree.....	64
Cercis.....	58	Grevillea.....	70-75	New Zealand Flax.....	83	Snakes Beard.....	84
Cerasus.....	56-62-73	Ground Rattan.....	81	Nolina.....	82	Snowball.....	64
Cestrum.....	73	Gum Tree.....	67-68	Norfolk Island Pine.....	65	Snowberry.....	64
Chamaecyparis.....	67	Gymnocladus.....	58	Nutmeg.....	70	Solanum.....	79-83
Chamaerops.....	80	Gynerium.....	84	Oak.....	59-69	Sollya.....	79
Cherry.....	62-73	Hackberry.....	57	Oleander.....	76	Sophora.....	59-61
Chestnut Flowering.....	62	Hakea.....	75	Oleaster.....	74	Sorbus.....	58
Chionanthus.....	57	Hawthorne, Indian.....	77	Olive Jap.....	76	Spear Lilly.....	83
Chili Jasmine.....	79	Heath.....	75	Ophiopogon.....	84	Spindle Tree.....	63
Choisya.....	73	Hedera.....	79	Oregon Grape.....	75	Spirea.....	64
Christmas Berry.....	73	Heliotropium.....	83	Oriental Poppy.....	84	Spiraea.....	64
Chrysanthemums.....	83-84	Heliotrope.....	83	Osmanthus Fragrans.....	76	Spotted Rock Rose.....	73
Cistus.....	73	Hercules Club.....	62	Paeonia Moutan.....	63	Spruce.....	70
Clematis.....	78	Heteromeles.....	73	Pagoda Tree.....	59-61	Strawberry Tree.....	63-77
Climbing Fig.....	78	Heuchera.....	83	Palmetto.....	81	Sterculia.....	59
Climbing Snowball.....	78	Hibiscus.....	61-83	Pampas Grass.....	84	Sumach.....	64
Cobaea.....	78	Holly.....	68	Pandanus.....	82	Swainsona.....	79
Cocos.....	80	Honey Locust.....	57	Pansy.....	84	Sweet Bay.....	75
Coffee Tree.....	58	Honeysuckle.....	78	Papaver.....	84	Sweet Gum Tree.....	60
Coleus.....	83	Hop Tree.....	58	Paper Mulberry.....	59	Sycamore.....	66
Colletia.....	73	Horse Chestnut.....	58	Parasol Tree.....	59	Symphoricarpos.....	64
Coprosma.....	73	Howea.....	81	Parkinsonia.....	69	Syringa.....	63
Coral Bells.....	83	Hydrangea.....	63	Passiflora.....	79	Tamarisk.....	64
Coral Plant.....	62-73	Hypericum.....	75	Passion Vine.....	79	Tamarix.....	64
Cordyline.....	82	Iberis.....	83	Paulownia.....	57	Taxodium.....	56
Cornus.....	62-74	Ilex.....	68	Peach, Flowering.....	59	Taxus.....	70
Coronilla.....	73	Ipomea.....	79	Pelargoniums.....	84	Tecoma.....	79
Corypha.....	80	Iresine.....	83	Peony Tree.....	63	Teucrium.....	77
Cotoneaster.....	73	Iris.....	85	Pepper Tree.....	69	Texas Umbrella.....	60
Cottonwood.....	57	Ivy.....	79	Periploca.....	79	Thorn.....	60
Crab, Flowering.....	61-62	Jacaranda.....	68	Periwinkle.....	84	Thuya.....	65-70
Crape, Myrtle.....	62	Jasminum.....	79	Phalangium.....	82	Thuyopsis.....	70
Crataegus.....	60	Jasmine.....	79	Philadelphus.....	63	Thymus.....	84
Cryptomeria.....	67	Jerusalem Cherry.....	83	Philodendron.....	84	Thyme.....	84
Cupressus.....	67-70	Jerusalem Thorn.....	69	Phlox.....	84	Tilia.....	58
Cycas.....	80	Jubaea.....	81	Phoenix.....	81	Torreya.....	70
Cyclamen.....	85	Judas Tree.....	58	Phormium.....	83	Trachycarpus.....	80
Cydonia.....	64	Juglans.....	61	Phyllostachys.....	82	Tradescantia.....	84
Cyperus.....	83	Juniper.....	68	Photinia.....	77	Transvaal Daisy.....	83
Cypress.....	56-67-70	Juniperus.....	68	Picea.....	70	Tritoma Uvaria.....	84
Cytisus.....	72	Kennedya.....	79	Pine.....	69-70	Trumpet Vine.....	79
Dahlia.....	85	Kentia.....	81	Pinus.....	69-70	Tumion Calif.....	70
Daisy.....	83	Kentucky Coffee Tree.....	58	Pittosporum.....	77	Tulip Tree.....	60
Daphne.....	73	Kerria.....	63	Platanus.....	60	Turks Cap.....	82
Daphniphyllum.....	74	Kolreuteria.....	60	Plumbago.....	79	Ulmus.....	57-61
Dasyliirion.....	82	Korean Velvet Grass.....	83	Plum.....	77	Umbrella Plant.....	83
Datura.....	71	Kudzu Vine.....	79	Poinciana.....	62	Umbrella, Texas.....	60
Decumaria.....	78	Lagerstromia.....	62	Poinsettia.....	84	Umbellularia.....	66
Deeringia.....	74	Lagunaria.....	75	Polygala.....	77	Varnish Tree.....	60
Dendrocalamus.....	82	Lantana.....	79-83	Pomegranate.....	63	Verbena.....	84
Dendropanax.....	74	Latania.....	79	Poplar.....	57-60	Veronica.....	77
Deutzia.....	62	Laurel.....	71-75	Populus.....	57-60	Victorian Bottle Tree.....	65
Dianthus.....	83	Laurus.....	71-75	Potato Vine.....	79	Viburnum.....	64-75
Diervilla.....	64	Laurustinus.....	75	Primrose.....	84	Vinca.....	84
Diosma.....	72	Lavender.....	83	Primula.....	84	Viola Odorata.....	84
Dogwood.....	62-74	Lavendula.....	83	Privet.....	63-77	Viola Tricolor.....	84
Dolichos.....	78	Lavender Cotton.....	84	Prunus.....	56-59	Violets.....	84
Doryanthes.....	83	Lemon Verbena.....	63	Ptelea.....	58	Virginia Creeper.....	78
Dracaenas.....	82	Leptospermum.....	75	Pterocarya.....	57	Vitis.....	79
Duranta.....	74	Libocedrus.....	68	Punica.....	63	Walnuts.....	27-28-60-61
Dutchman Pipe.....	78	Ligustrum.....	63-77	Pueraria.....	79	Wandering Jew.....	84
Egyptian Paper Plant.....	83	Lilac.....	63	Pyracantha.....	72	Washingtonias.....	81
Elaeagnus.....	74	Lime Tree.....	58	Quince.....	64	Weigela.....	64
Elder.....	62-63	Linden.....	58	Quercus.....	59-69	Wild Anemone.....	72
Elephant Ear.....	84	Lippia.....	63	Raphiolepis.....	77	Willow.....	60-61
Elm.....	57-61	Liquidambar.....	60	Red Hot Poker.....	84	Wire Vine.....	79
Empress Tree.....	57	Livistona.....	81	Rhamnus.....	77	Wistaria.....	79
Erica.....	75	Liriodendron.....	60	Rhapis.....	81	Xanthoceras.....	62
Erythea.....	80	Locust.....	57-58-61	Rhodotypos.....	63	Yew.....	66-70
Erythrina.....	62	Lonicera.....	78	Rhus.....	64	Yucca.....	82
Escallonia.....	74	Lotus.....	83	Rice Paper Plant.....	71	Zoisia Pungens.....	83

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TREE LABELS. $3\frac{1}{2}$ -inch iron wire, \$1.10 per 1000; $3\frac{1}{2}$ -inch copper wire, \$1.35 per 1,000. No printed labels furnished.

RAFFIA. SUPERIOR XX. The Raffia is of the very best quality. The strands long, soft, pliable and strong; guaranteed first class. Lb., 30c.

MERINO SPECIAL, LAWN AND GARDEN FERTILIZER. Manufactured expressly for us. The base of this material is bone meal; to this is added mineral and animal matter, which makes it a valuable dressing for gardens and lawns. Manufactured under guaranteed analysis, which will be supplied on request. Valuable for potted plants, 25 lbs., sacked, 75c; 50 lbs., sacked, \$1.50; 100 lbs., sacked, \$2.50.

TREE CALIPER. (4) The "Chase" is made of steel "rust proof." Contains 15 different grades. Price, 75c each.

The "Watson." Manufactured from aluminum, contains 7 grades. Price, 50c each.

YUCCA TREE PROTECTORS. (1) Our extremely long, hot and dry summers make it imperative for all fruit-growers to shade the bodies of young trees the first season. The most efficient and valuable protectors are made from the Yucca Palm. Soak the bundles in water before using.

Length	Width	Wt. per 100	100	1000
30 in.	7 in.	22 lbs.	\$2 50	\$21 00
24 in.	7 in.	18 lbs.	2 00	18 00
18 in.	7 in.	13 lbs.	1 75	15 00
16 in.	7 in.	12 lbs.	1 50	13 50
14 in.	7 in.	10 lbs.	1 30	12 00
12 in.	7 in.	9 lbs.	1 15	11 00
10 in.	7 in.	9 lbs.	1 10	10 00

EXPAN TREE PROTECTORS. Manufactured out of either paraffined or tarred paper; perforated; very durable. No. 1 grade.

Length	Width	100	1000
24 in.	7 in.	\$1 25	\$12 00
18 in.	7 in.	1 25	10 25
14 in.	7 in.	1 25	9 25
12 in.	7 in.	1 00	8 00

KNIVES

We have selected the following American and European manufacture of Knives and Shears, having tested them and found them made of the very best quality of steel and entirely suitable for the work for which they were intended. We do not hesitate in recommending them to our customers.

Henckel Folding Pruner. (6) Cocoa handle, steel-lined; length handle 4 inches. Blade oil-tested and tempered. For heavy work. \$1.50 each.

Folding Budder. (5) Ebony handle; brass-lined, with ivory tip forged same as the finest razor; best on the market. \$1.50 each; light grade, \$1.00 each.

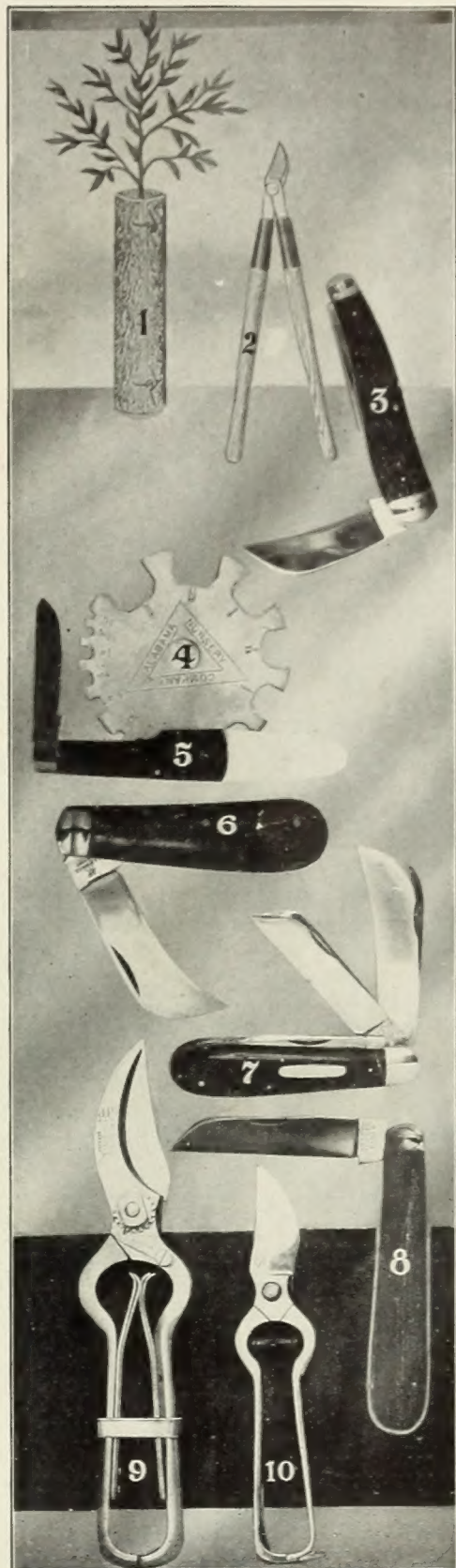
Stationary Handle Budder. Maplewood; fine quality steel. 30c each.

Folding Budding and Pruning Knife. (3) Bone handle; material guaranteed. Price, \$1.25 each.

Stationary Handle Grafting Knife. Maplewood handle, patterned after most approved style; fine quality steel; heavy size. 50c each.

All Purpose Knife. (7) Manufactured expressly for us. $3\frac{1}{2}$ inches long; budding, pruning and grafting blades. Made of best material and suitable for nursery and orchard work. Fully guaranteed by the manufacturer. \$1.50 each.

Note:—No. 8 in cut now out of stock.



Plantmen's Requisites

PRUNING SHEARS

Perfect Pruning Shear. (9) American manufacture. This new shear we have tested and found it to be highly satisfactory. Price per pair, \$2.25, actual weight, 1 lb.

Fresno Pruning Shear. (2) Made of finest tempered steel; jaws spread $3\frac{1}{2}$ inches; handles are made of ash, and sockets are strengthened with a steel band. Weight, per pair, $2\frac{3}{4}$ lbs.; length, handle and blade, 26 inches. Per pair, \$3.00

Henckel's Rose Shear. (10) For light pruning and cutting flowers. Weight, $\frac{1}{4}$ lb.; 6 inches long. Per pair, \$1.25.



HAULING BANNER STRAWBERRIES IN
SHIPPING CRATES FROM FIELD.



BANNER
STRAWBERRIES



PICKING BANNER STRAWBERRIES-
NOTE VIGOROUS VINES.